Title page at end of fol. 4

VOL. IX.—PART I.] [JANUARY.

HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS,

OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

THIRD SERIES.

EDITED BY

SIR JOSEPH DALTON HOOKER, K.C.S.I., C.B., M.D., F.R.S.

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B

M S. del. et lith.

Phialanthus myrtilloides, Gris.

Plate 1801.

PHIALANTHUS MYRTILLOIDES, *Griseb.*

Rubiaceæ. Tribe Chiococceæ.

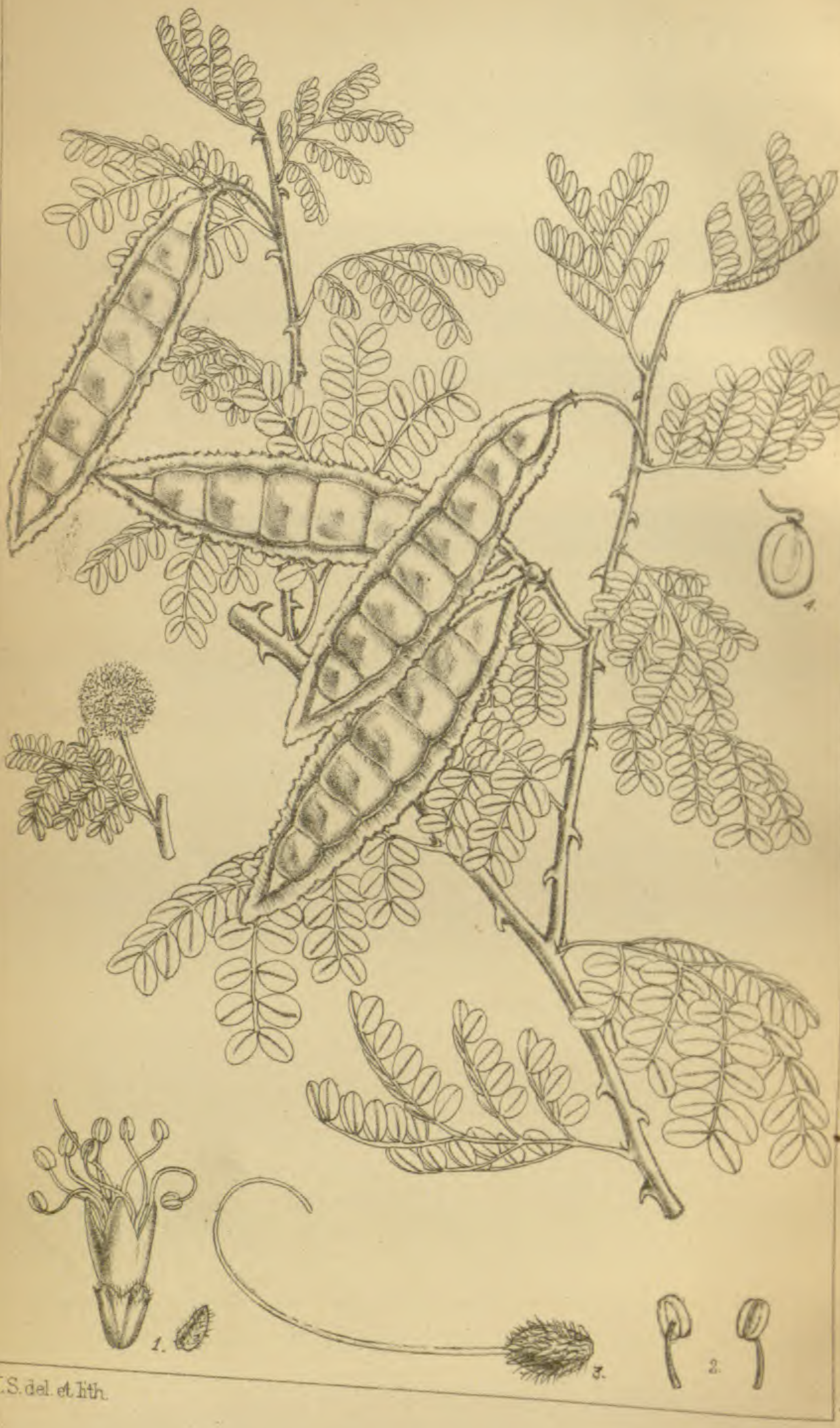
P. myrtilloides, *Griseb. Flora Brit. West Ind.* 335 ; fruticosus, glaber, viscosus, foliis breviter petiolatis oblongis obtusis e medio ad basin angustatis rigide coriaceis margine revolutis, floribus subsessilibus paucis glomeratis, calycis segmentis oblanceolatis foliaceis ovario æquilongis, corollæ tubo campanulato segmentis brevibus ovatis flore expanso patulis.

Hab. Bahamas, *Swainson* ; Acklin's Island, *Eggers*, 3968 ; Fortune Island, *Eggers*, 3858 ; Cuba, *C. Wright*, 2724.

Frutex ramosissimus 6–8-pedalis, habitu *Buxi*. *Folia* 6–8 lin. longa, venulis inconspicuis immersis, stipulis in annulum campanulatum coalitis. *Calyx* (cum ovario) 1 lin. longus. *Corolla* expansa 1 lin. diam. *Ovarium* biloculare, ovulis solitariis pendulis. *Fructus* ignotus.

A link between the Cuban and Bahaman floras. The genus is not elsewhere known. There are five species in Cuba, and this is the only one at present known in the Bahaman group.—J. G. Baker.

Fig. 1. Connate stipules. 2. A flower. 3. Calyx and pistil. *All enlarged.*



M.S. del. et lith.

Mimosa bahamensis, Benth.

Plate 1802.

MIMOSA BAHAMENSIS, *Benth.*

Leguminosæ. Tribe Eumimoseæ.

M. bahamensis, *Benth. in Hook. Journ. Bot.* iv. 408; *Trans. Linn. Soc.* xxvii. 422; fruticosa, ramulis ferrugineo-pubescentibus aculeis uncinatis armatis, foliorum pinnis 3–4-jugis, foliolis 3–6-jugis obovatis contiguis glabrescentibus, capitulis parvis globosis axillaribus vel ad ramorum apices racemosis, legumine lineari tenui 6–8-spermo undique alato.—Griseb. Fl. Brit. West Ind. 219.

Hab. Bahamas, *Swainson*; Long Cay, *Brace*, 443; Fortune Island, *Eggers*, 3806.

Frutex 6–8-pedalis. *Foliola* 2 lin. longa. *Capitula* 3 lin. diam. *Calyx* campanulatus, dentibus parvis. *Corolla* infundibularis, segmentis tubo brevioribus. *Legumen* $1\frac{1}{2}$–2 poll. longum tenue articulatum ferrugineo-pubescens, undique ala cornea denticulata marginatum.

When Mr. Bentham's monograph in the 'Transactions of the Linnean Society' was written, this was known in flower only. Since that time the fruit has been found both by Brace and Eggers. It is one of the few endemic Bahaman plants.—J. G. Baker.

Fig. 1. Flower complete. 2. Stamens. 3. Pistil. *All enlarged.*

M.S. del. et lith.

Plate 1803.

ACACIA ACUIFERA, *Benth.*

Leguminosæ. Tribe Acacieæ.

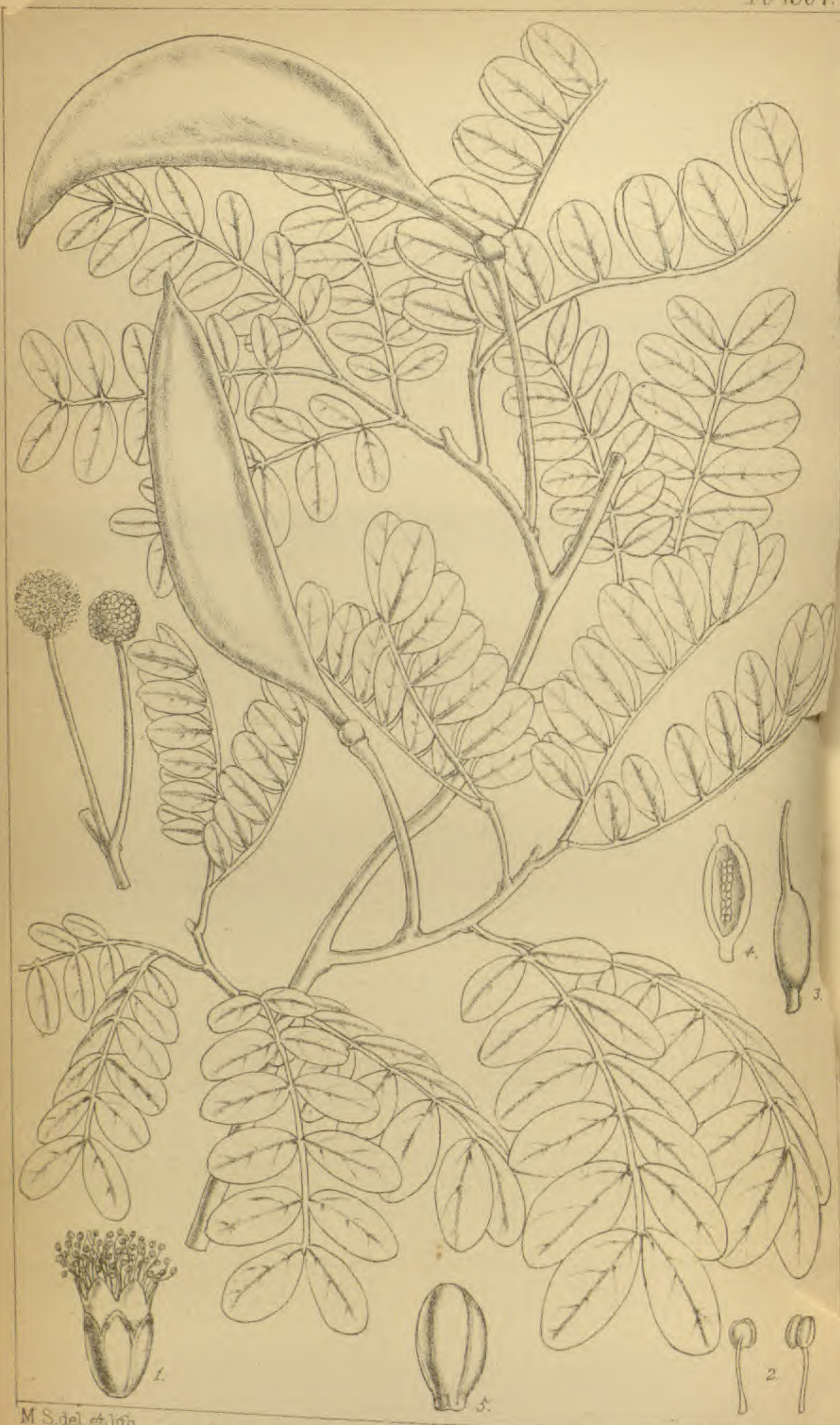
A. acuifera, *Benth. in Hook. Lond. Journ.* i. 496; *Trans. Linn. Soc.* xxvii. 503; arborea, ramulis glabris aculeis ascendentibus subulatis geminis pungentibus armatis, foliorum pinnis unijugis, foliolis 12–14-jugis lineari-oblongis crebris glabris, capitulis parvis globosis axillaribus pedunculatis, legumine lineari glabro valde arcuato.

Hab. Bahamas, *Swainson*; Long Cay, *Brace*, 449, 459; Fortune Island, *Eggers*, 3289; Turk's Island, *Hjalmarson*.

Arbuscula 10–12-pedalis. *Folia* breviter petiolata, pinnis 1½–2 poll., foliolis rigidulis 3 lin. longis. *Capitula* 2 lin. diam., ad foliorum axillas 1–3-na longe pedunculata. *Calyx* brevissimus. *Corolla* campanulata flava, segmentis parvis ovatis. *Legumen* 2–3 poll. longum, 3 lin. latum, suturis leviter incrassatis.

An endemic Bahaman species, nearly allied to the widely-spread *A. Farnesiana*, Willd.—J. G. Baker.

Fig. 1. Complete flower. 2. Stamens. 3. Pistil. 4. Section of ovary. 5. Seed. *All more or less enlarged.*



M S. del. et lith.

Acacia choriophylla, Benth.

Plate 1804.

ACACIA CHORIOPHYLLA, *Benth.*

Leguminosæ. Tribe Acacieæ.

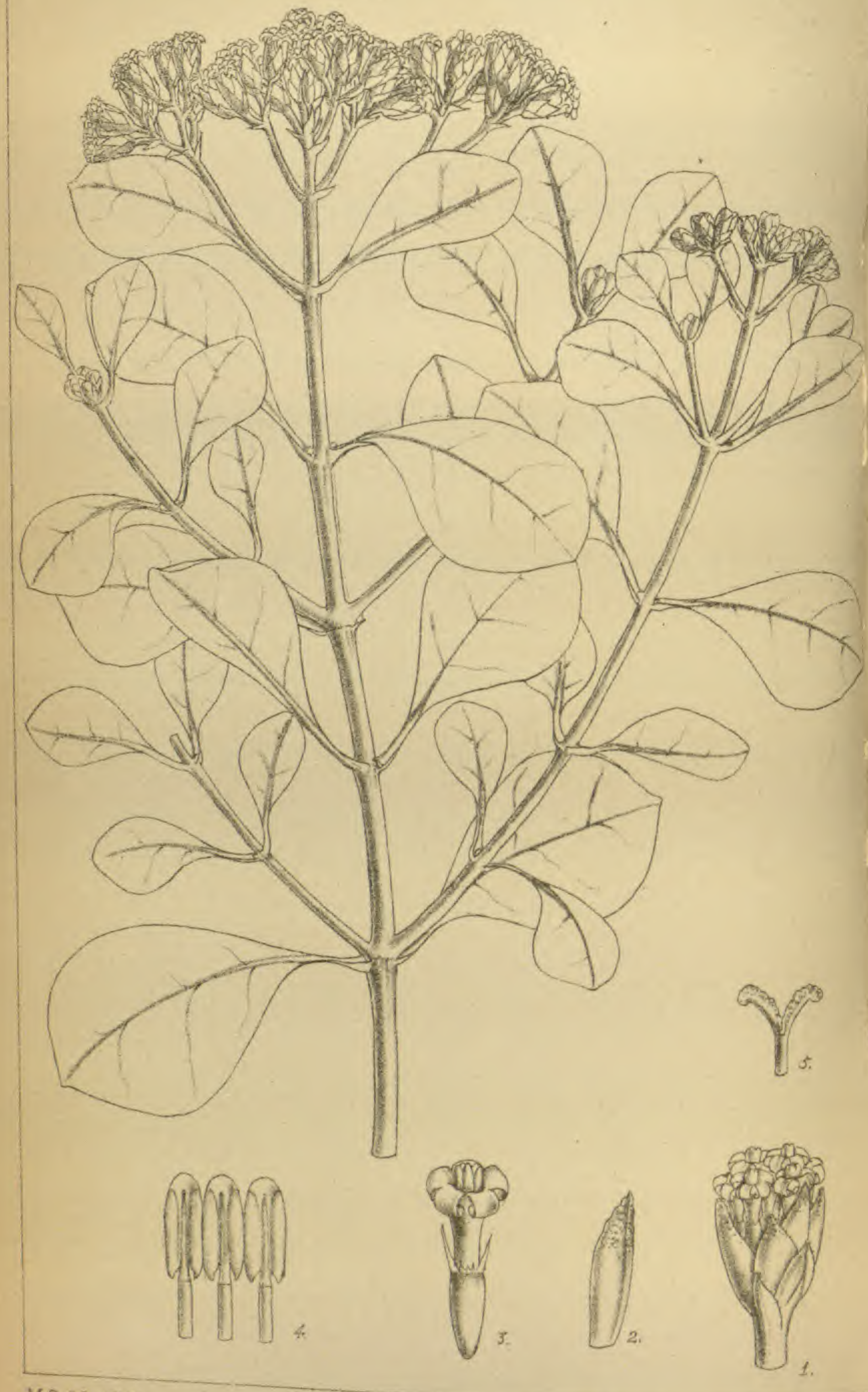
A. choriophylla, *Benth. in Hook. Lond. Journ.* i. 495; *Trans. Linn. Soc.* xxvii. 503; arborea, ramulis inermibus vel aculeis minutis interdum armatis, foliorum pinnis 1–3-jugis, foliolis crebris oblongis rigidulis glabris 5–6-jugis, capitulis parvis globosis axillaribus pedunculatis solitariis vel fasciculatis, legumine crasso coriaceo oblongo acuto.

Hab. Bahamas, *Swainson*; New Providence, *Brace*, 109, 359; Acklin's Island, *Eggers*, 3923.

Arbor 20-pedalis. *Foliola* 6–12 lin. longa. *Capitula* 3 lin. diam. *Calyx* campanulatus, dentibus ovatis tubo brevioribus. *Corolla* flava campanulata calyce paulo longiora. *Legumen* breviter stipitatum 2 poll. longum. 6–7 lin. latum ad apicem et basin attenuatum.

This is another very distinct endemic Bahaman species.—J. G. Baker.

Fig. 1. Flower complete. 2. Stamens. 3. Pistil. 4. Section of ovary. 5. Seed. *All more or less enlarged.*



M.S. del. et lith.

Salmea petrobioides, Griseb.

Plate 1805.

SALMEA PETROBIOIDES, *Griseb.*

Compositæ. Tribe Helianthoideæ.

S. petrobioides, *Griseb. Flora Brit. West Ind.* 375; fruticosa, glabra, foliis obovato-cuneatis integris obtusis petiolatis, capitulis parvis paucifloris dense corymboso-paniculatis, involucro campanulato bracteis pauciseriatis interioribus oblongis exterioribus ovatis, receptaculi paleis rigidulis oblongo-lanceolatis, achænii aristis exalatis subæquilongis, styli ramis brevibus falcatis.

Hab. Bahamas, *Swainson*, *Brace*, 220; Hog Island, on rocks of the seashore, *Eggers*, 4259.

Frutex 4-pedalis, ramulis lignosis teretibus. *Folia* 6–15 lin. longa obscure cuspidata. *Involucrum* 2 lin. longum. *Corolla* albida, segmentis lanceolatis revolutis tubo infundibulari duplo brevioribus. *Achænii* anguli haud ciliati.

An endemic Bahaman species of a moderately large West Indian and Mexican genus.—J. G. Baker.

Fig. 1. Capitulum. 2. Scale of the receptacle. 3. A single flower, complete. 4. Stamens. 5. Summit of the style. *All more or less enlarged.*

M.S. del. et lith.

Buxus bahamensis, Baker.

Plate 1806.

BUXUS BAHAMENSIS, *Baker.*

Euphorbiaceæ. Tribe Buxeæ.

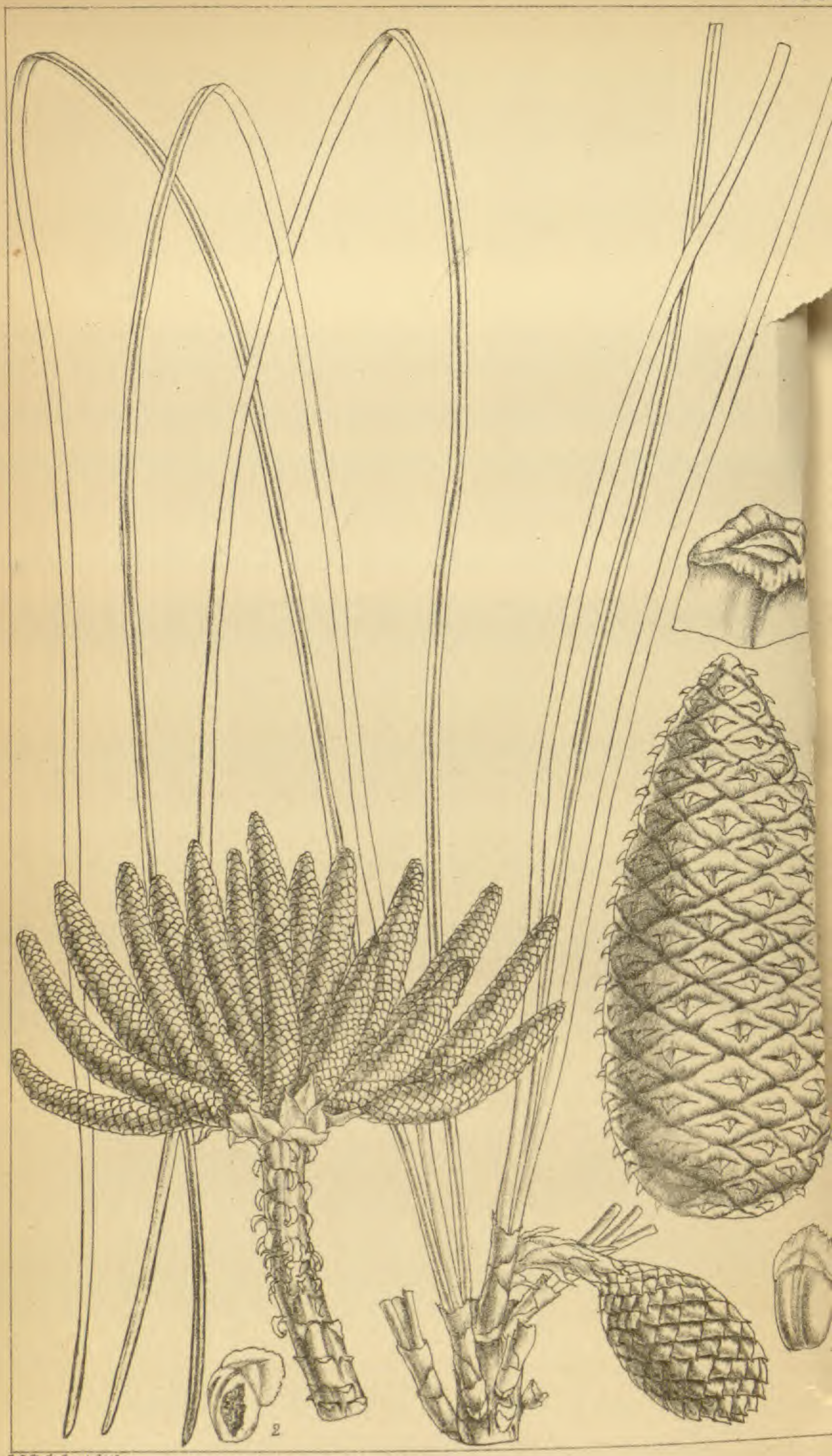
B. (*Tricera*) **bahamensis**, *Baker* (*n. sp.*); foliis breviter petiolatis rigidis oblongis acutis obsolete venosis, bracteis minutis ovatis viridibus, floribus fœmineis solitariis breviter pedicellatis, calycis segmentis parvis ovatis viridibus, stylis lanceolatis reflexis ovario paulo brevioribus, coccis apice breviter bicornutis, floribus masculis in cymis lateralibus paucifloris breviter pedunculatis dispositis, staminibus calyce longioribus.

Hab. Bahamas; Long Cay, *Brace*, 461; Fortune Island, *Eggers*, 3815.

Frutex 4-pedalis, habitu *B. sempervirentis*. *Folia* rigide coriacea, 12–15 lin. longa. Floris masculi *sepala* 1 lin. longa. *Cocci* 2–2½ lin. longa.

A new endemic Bahaman species allied to the Jamaican *B. Vahlii* and Cuban *B. retusa* and *gonoclada* of Müll. Arg.—J. G. Baker.

Fig. 1. Cyme of male flowers. 2. Male flower cut open. 3. Female flower. 4. Vertical section of ovary. 5. Fruit of three cocci. 6. Seed. *All more or less enlarged.*



M.S del, et lith.

Pinus bahamensis, Griseb.

Plate 1807.

PINUS BAHAMENSIS, *Griseb.*

Coniferæ. Tribe Abietineæ.

P. (*Tæda*) **bahamensis**, *Griseb. Fl. Brit. West Ind.* 503; arbor medio-cris, vaginarum squamis ovatis membranaceis, foliis ternis gracilibus pedalibus dorso rotundatis facie canaliculatis carina prominente, amentis masculis sessilibus dense glomeratis, strobilis ovato-oblongis solitariis cernuis pedunculatis, squamarum apophysi rhomboideo umbone centrali conico haud pungente marginibus latis convexis lævibus.

Hab. Bahamas; New Providence, *Brace*, 103, 302, 438; *Eggers*, 4172.

Arbor 40-pedalis, trunco pedali diam. *Foliorum* fasciculi ad ramulos conferti ascendentes. *Folia* matura pedalia et ultra, $\frac{1}{2}$ lin. diam. *Amenta* mascula 12–18 lin. longa. *Strobili* 3–$3\frac{1}{2}$ poll. longi, 2 poll. diam.

Baron Eggers describes this Pine as forming dense woods in the island of New Providence. Grisebach had the cones only, but the leaves confirm his suggestion that it belongs to the section *Tæda*, to which the Cuban *P. cubensis*, Griseb., also belongs.—J. G. Baker.

Fig. 1. Front view of stamen. 2. Back view of stamen. 3. Apophysis of top of scale of cone. *All enlarged.*

M. S. del. et lith.

Liparis Cathcartii, Hook. fil.

PLATE 1808.

LIPARIS CATHCARTII, *Hook. f.*

ORCHIDEÆ. Tribe LIPARIDEÆ.

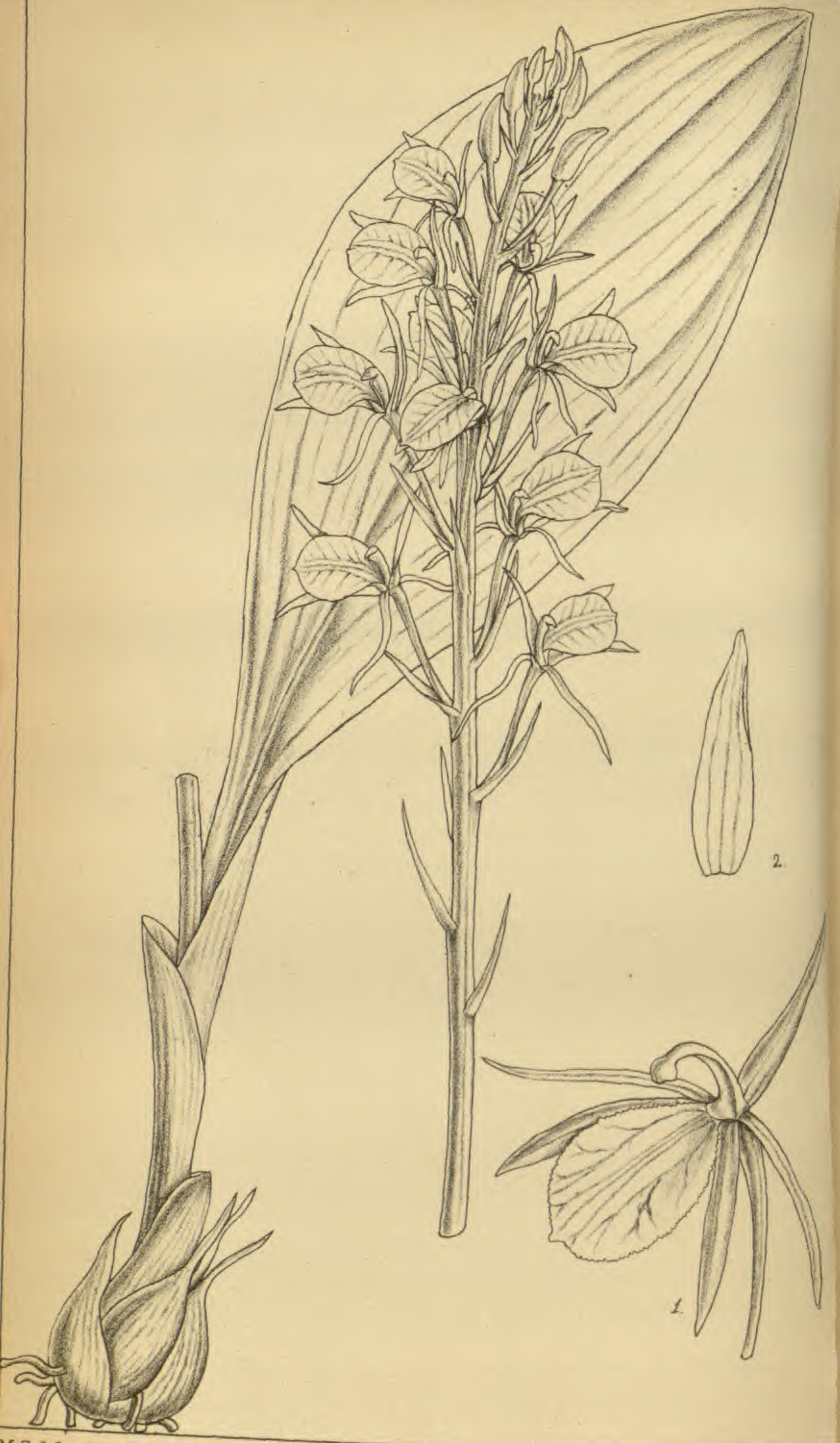
L. (*Mollifolia*) **Cathcartii**, *Hook. f.* (*sp. nov.*); terrestris, caule diphyllo, foliis subopppositis petiolatis elliptico-ovatis subcordatisve acutis, scapo gracili, bracteis minutis ovatis, sepalis lanceolatis acutis 3-nerviis marginibus revolutis, petalis anguste linearibus deflexis, labello obcordato v. obovato-rotundato integerrimo v. obscure crenulato callis 2 prope basin elongatis, columna elongata incurva alis obscuris. L. rupestris in part., *Ridley in Journ. Linn. Soc.* xxii. 268 (*non Griff.*).

HAB. Sikkim Himalaya, alt. 8,000 to 10,000 ft., *J. D. H.*; *Clarke*.

Caulis 2–3-pollicaris, vaginatus, vaginis subacutis. *Folia* 3–4-poll. longa, multinervia. *Scapus* una cum racemo 3–6-pollicaris; bracteæ sparsæ, late ovatæ, vix $\frac{1}{20}$ poll. longæ. *Labellum* $\frac{1}{3}$–$\frac{1}{2}$ poll. longum, flavidum v. purpurascens; calli interdum in carinis elongatis producti.

The minute bracts, elongate calli in the lip, and long slender column distinguish this at once from *L. Roylei*.—J. D. HOOKER.

Fig. 1. Flower, with suborbicular lip. 2. Sepal. 3. Lip from another specimen. *All enlarged*.



M.S. del. et lith.

Liparis Glossula. Reichb f.

Plate 1809.

LIPARIS GLOSSULA, *Reichb. f.*

Orchideæ. Tribe Liparideæ.

L. (*Mollifolia*) **Glossula**, *Reichb. f. in Linnæa*, xli. 43; terrestris, caule monophyllo, folio elliptico-lanceolato acuto in petiolum latiusculum angustato integerrimo, scapo valido, bracteis elongatis lineari-lanceolatis erectis, sepalis patentibus oblongo-lanceolatis 3-nerviis marginibus revolutis, petalis anguste linearibus, labello late obovato-oblongo cuspidato crenulato ecalloso, columna incurva alis obscuris. *Ridley in Journ. Linn. Soc.* xxii. 268.

Hab. Western and Central Himalaya; Kumaon, alt. 5,000 to 7,000 ft., *Edgeworth, Strachey and Winterbottom* (*L. nepalensis*), *Duthie*; Nepal, *Wallich*; Sikkim, at Chumbi, *King's Collector*.

Pseudobulbi ovoidei 1–1½ pollicares. *Caulis* 2–3-pollicaris, vaginis obtusis appressis tectus. *Folium* 2–6-pollicare, ⅔–1⅓ poll. latum, nervis gracilibus. *Scapus* cum racemo 4–7-pollicaris; bracteæ ½–⅔ poll. longæ, ovario breviores. *Labellum* ⅓–½ poll. longum. *Columna* gracilis, incurva, alis ad apicem minutis rotundatis.—J. D. Hooker.

Fig. 1. Flower. 2. Sepal. *Both enlarged.*

M. S. del, et lith.

Liparis pulchella, Hook. f.

Plate 1810.

LIPARIS PULCHELLA, *Hook. f.*

Orchideæ. Tribe Liparideæ.

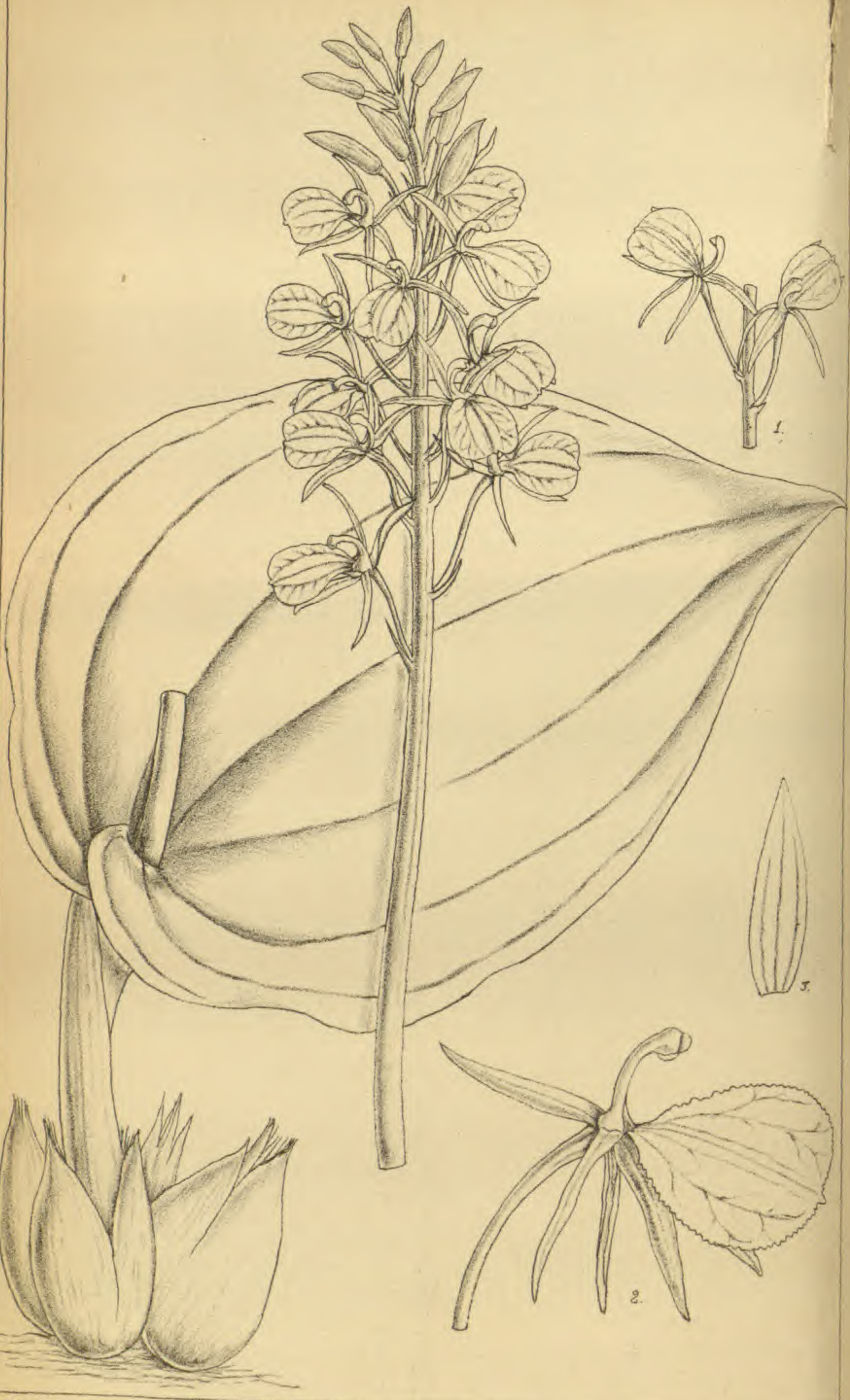
L. (*Mollifolia*) **pulchella**, *Hook. f.* (*sp. nov.*); terrestris, caule diphyllo, foliis longe petiolatis rotundato-ovatis acuminatis basi cordatis, scapo gracili nudo, racemo laxe-paucifloro, bracteis parvis lanceolatis, sepalis lanceolatis acutis 3-nerviis marginibus revolutis, petalis anguste linearibus decurvis, labello oblongo v. obovato-oblongo retuso v. acuto callis 2 basi minutis, columna gracili incurva alis terminalibus minutis rotundatis v. uncinatis. L. rupestris *var.* purpurascens, *Ridley in Journ. Linn. Soc.* xxii. 268.

Hab. Khasia Hills; at Myrung, Moflong, and Sururem, alt. 5,000 to 6,000 ft., *J. D. H.* and *T. T.* (*Herb. Ind. Or.* Liparis, No. 7). Naga Hills, in Upper Assam, *Prain*.

Rhizoma repens, robustum, pseudobulbis parvis ovoideis v. globosis. *Caulis* subnullus v. $\frac{1}{2}$–3 poll. longus. *Folia* $1\frac{1}{2}$–2 poll. longa, 7–9-nervia. *Scapus* una cum racemo 3–6-pollicaris; bracteæ $\frac{1}{4}$–$\frac{1}{3}$ poll. longæ; pedicelli filiformes. *Labellum* $\frac{1}{3}$ poll. longum, purpurascens, basi rotundatum, callis obscuris, marginibus minutissime erosis.

A beautiful species, allied to *L. nepalensis*, but much smaller and more slender, with much smaller bracts and a broader lip. Ridley makes of this a variety of his *L. rupestris*, Griff., which is not Griffiths' plant. His description of *rupestris* is made up of that of Griffith ('Notul.' iii. 276), of which no specimens are known to exist, and Reichenbach's *L. rostrata*, which is a very different species.—J. D. Hooker.

Fig. 1. Side and (2) back view of flower. 3. Sepal. 4 and 5. Lips of different forms. *All enlarged.*



M.S. del. et lith.

Liparis cordifolia, Hook. f.

Plate 1811.

LIPARIS CORDIFOLIA, *Hook. f.*

Orchideæ. Tribe Liparideæ.

L. (*Mollifolia*) **cordifolia**, *Hook. f.* (*sp. nov.*); terrestris, caule monophyllo, folio sessili rotundato-cordato acuminato basi scapum gracilem teretem nudum amplectente, bracteis parvis, pedicellis gracilibus, sepalis lanceolatis acutis 3-nerviis, petalis angustis brevioribus deflexis, labello amplo obcordato v. obovato-rotundato apiculato crenulato ecalloso, columna gracillime incurva, alis terminalibus parvis rotundatis. L. rupestris, *Ridley in Journ. Linn. Soc.* xxii. 268, *ex parte* (*non Griff.*).

Hab. North-west Himalaya (*drawing in Herb. Kew*); Sikkim, at Yoksun, alt. 6,000 ft., *Clarke*; Khasia Hills, alt. 3,600 ft., *Griffith*, *J. D. H.* and *T. T.* (*Herb. Ind. Or.* Liparis, No. 8).

Pseudobulbi parvi, conferti. *Caulis* brevis, crassiusculus. *Folium* 2–5 poll. longum, 5–7-nerve; lobis basalibus convolutis scapum amplectentibus. *Scapus* una cum racemo 4–5 pollicaris; bracteæ $1\frac{1}{2}$–$\frac{1}{4}$ poll. longæ. *Labellum*, $\frac{1}{2}$ poll. longum et latum.

This has been referred by Mr. Ridley to Griffiths' *L. rupestris* of the Khasia Hills, of which no specimen exists, but in that plant, according to Griffiths' detailed description, the flowers are small, the scape is angled and winged, and the lip oblong.—J. D. Hooker.

Fig. 1. Portion of rachis of raceme, with minute bracts; *of the natural size.* 2. Flower. 3. Sepal. *Both enlarged.*

M.S. del. et lith.

Liparis Gamblei, Hook.f.

Plate 1812.

LIPARIS GAMBLEI, *Hook. f.*

Orchideæ. Tribe Liparideæ.

L. (*Mollifolia*) **Gamblei,** *Hook. f.* (*sp. nov.*) ; terrestris, caule monophyllo, folio sessili elliptico obtuso v. subacuto margine integerrimo v. crenulato, scapo valido, bracteis brevibus ovatis acutis, sepalis patentibus oblongo-lanceolatis obtusis 3-nerviis marginibus revolutis, petalis anguste linearibus, labello elliptico-oblongo acuto deflexo basi callis 2 parvis instructo, columna gracili incurva alis prope apicem minutis.

Hab. Sikkim Himalaya; at Rungbee, *Clarke*; Sinchul, alt. 6,500 ft., *Gamble*.

Pseudobulbi parvi, ovoidei. *Caulis* 2–3 pollicaris, sulcatus. *Folium* membranaceum, 4–6 poll. longum, multinerve, basi acutum, supra basin complicatum, scapum validum amplectens. *Scapus* crassitie pennæ corvinæ, brevis; racemus 2–3-pollicaris, multiflorus, rachi valida; bracteæ $\frac{1}{6}$ poll. longæ, persistentes; pedicelli paullo longiores, *Labellum* $\frac{1}{5}$ poll. longum.

Closely allied to *L. Glossula*, Reichb. f. (*supra*, pl. 1809), but differing in the short bracts, smaller flowers, and differently shaped lip.—J. D. Hooker.

Fig. 1. Margin of leaf of crenulate form; *of the natural size.* 2. Flower. 3 and 4. Lips. 5. Sepal. *All enlarged.*

M.S. del. et lith.

Liparis rostrata, Reich f.

LIPARIS ROSTRATA, *Reichb. f.*

ORCHIDEÆ. Tribe LIPARIDEÆ.

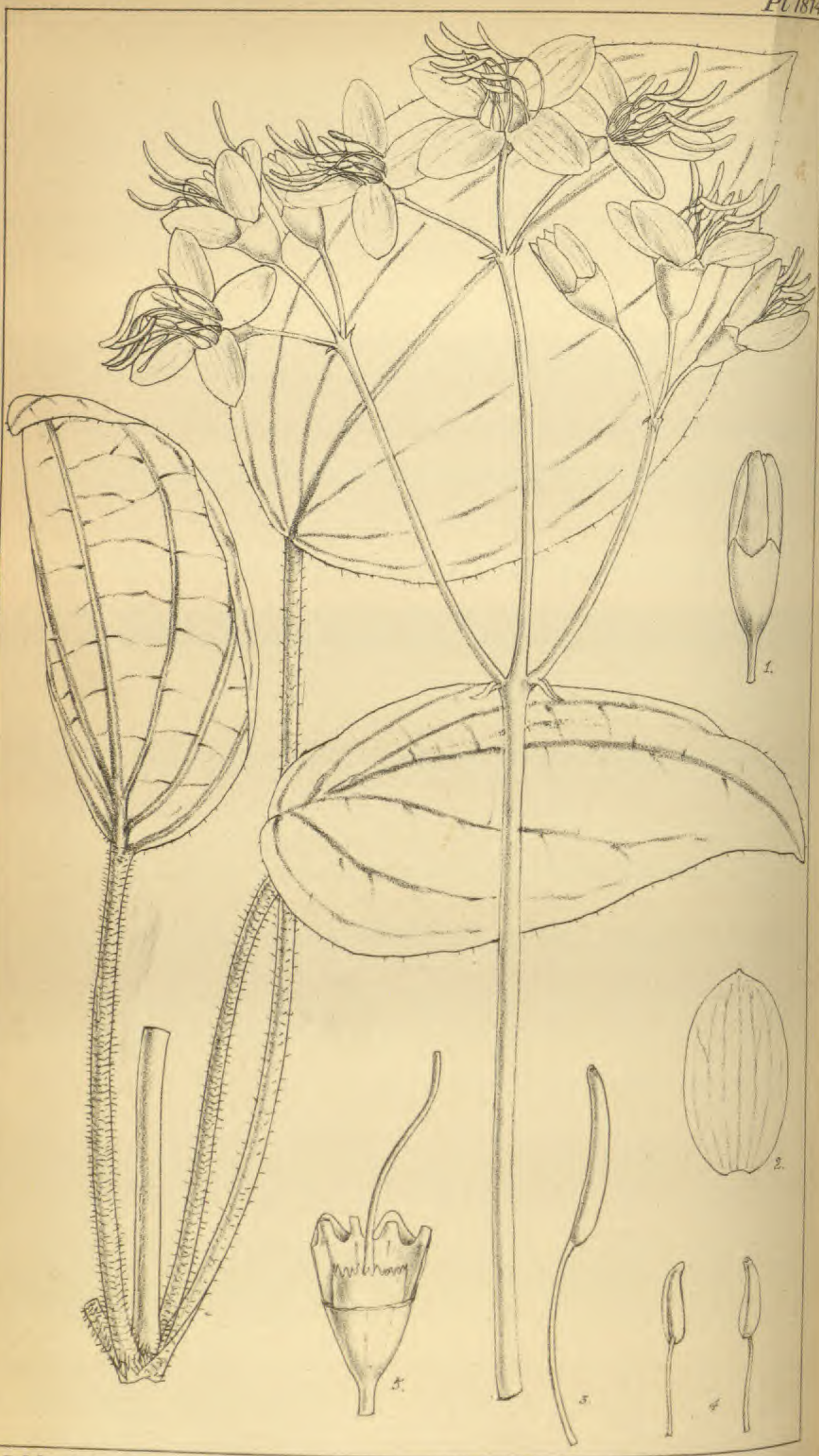
L. (*Mollifolia*) **rostrata**, *Reichb. f. in Linnæa*, xli. 44; terrestris, caule diphyllo, foliis suboppositis subsessilbus petiolatisve elliptico-oblongis acutis, scapo foliis breviore, racemo pyramidato, bracteis parvis ovato-oblongis deflexis ovario multoties brevioribus, sepalis lanceolatis 3-nerviis marginibus revolutis, petalis deflexis anguste linearibus, labello orbiculari-obcordato apiculato crenulato ecalloso, columna breviuscula alis apicalibus minutis rotundatis. L. olivacea *ex parte*, *Herb. Hook. f. et Thoms.* (*non Lindl.*). L. rupestris *ex parte*, *Ridley in Journ. Linn. Soc.* xxii. 268 (*non Griffith*).

HAB. Western Himalaya, *Royle*; Simla, alt. 6,000–8,000 ft. *Thomson*; Kumaon, alt. 5,000–7,000 ft., *Edgeworth*.

Pseudobulbi ovoidei, rhizomate brevi conferti. *Caulis* 1–3-pollicaris, vaginis obtusis appressis tectus. *Folia* $\frac{1}{2}$–3-pollicaria, petiolo lato. *Scapus* una cum racemo 2–6-pollicaris; bracteæ $\frac{1}{12}$–$\frac{1}{2}$ poll. long; pedicelli graciles, $\frac{1}{3}$–$\frac{1}{2}$ poll.; flores virides. *Labellum* $\frac{1}{3}$–$\frac{1}{2}$ poll. latum, in unguem brevem contractum, dein subcordatum. *Columna* basi lata, superne sensim angustata.

Differs from *L. Cathcartii* (pl. 1808) in the large bracts, very different lip without calli, and short stout column; from *L. olivacea*, Lindl., in the small bracts, 3-nerved sepals, and obcordate lip. From *L. rupestris*, Griff., under which Ridley has placed it, it differs in not having a solitary sessile cordate leaf, and in other characters.—J. D. HOOKER.

Fig. 1. Flower. 2. Sepal. *Both enlarged.*



M.S. del. et lith.

Sonerila peperomiæfolia, Oliv.

Plate 1814.

SONERILA PEPEROMIÆFOLIA, *Oliv.*

Melastomaceæ. Tribe Sonerileæ.

S. peperomiæfolia, *Oliv.* (*sp. nov.*); acaulescens, foliis longiuscule petiolatis carnosulis late ovato-ellipticis apice acutatis breviter acuminatis v. obtusis basi late rotundatis angustissime auriculato-cordatis 5–7-nerviis, supra glabris subtus in nerviis parce setuloso-hirtis, scapis erectis glabris supra medium trichotome divisis 5–9-floris, floribus tetrameris pedicellatis sæpius ternis, calyce turbinato basi in pedicellum angustato glabro dentibus 4 deltoideis brevibus, petalis ellipticis obtusis mucronulatis, staminibus biseriatis 4 majoribus longe exsertis minoribus (antheris flavidis) duplo longioribus.

Hab. China, Prov. Kwantung, *Dr. G. R. Tate*; North River, *C. Ford* (No. 336).

Folia lamina $1\frac{3}{4}$–6 poll. longa, $1\frac{1}{2}$–4 poll. lata; petiolus 1–4 poll. longus parce setulosus. *Scapus* folia saepius superans carnosulus. *Pedicelli* calyce æquilongi parce setulosi v. glabri. *Petala* $\frac{1}{2}$ poll. longa. Stamina longiora $\frac{2}{3}$–$\frac{3}{4}$ poll. longa.

The calyx of the dry flowers appears to be 4-costate or obscurely 4-angled. Dr. Tate's specimens are in fruit, and the calyx in these shows the ridges more distinctly, with intermediate ones, becoming almost narrowly alate and decurrent into the pedicels.—D. Oliver.

Fig. 1. Bud. 2. Petal. 3. Long and (4) short stamens. 3. Calyx laid open above. *All enlarged.*

M.S. del et lith.

Faberia sinensis, Hemsl.

Plate 1815.

FABERIA SINENSIS, *Hemsl.*

COMPOSITÆ. Tribe CICHORIACEÆ.

Faberia, *Hemsl.* (*gen. nov. inter Troximonem et Taraxacum*). *Capitula* homogama, liguliflora. *Involucrum* campanulatum, bracteis herbaceis intimis uniseriatis coloratis pappum æquantibus, exterioribus pluriseriatis appressis gradatim minoribus, extimis squamiformibus. *Receptaculum* planum vel leviter convexum, epaleaceum. *Corollæ* ligulatæ, apice 5-dentatæ. *Antheræ* . . . *Styli* rami tenues, elongati, papillosi. *Achænia* fusiformia, striata, vel leviter costata, minute hispidula, erostrata. *Pappi* setæ fuscæ, uniseriatæ, simplices, basin versus barbellatæ, inæquales.—Herba *scapigera*. Folia *lyrato-pinnatifida*. Scapi *oligocephali*. Capitula *majuscula*.

F. sinensis, *Hemsl.* (*sp. unica*).

HAB. Mount Omei, Szechuen, China, at 4,000 to 4,500 ft., *Rev. Ernst Faber*.

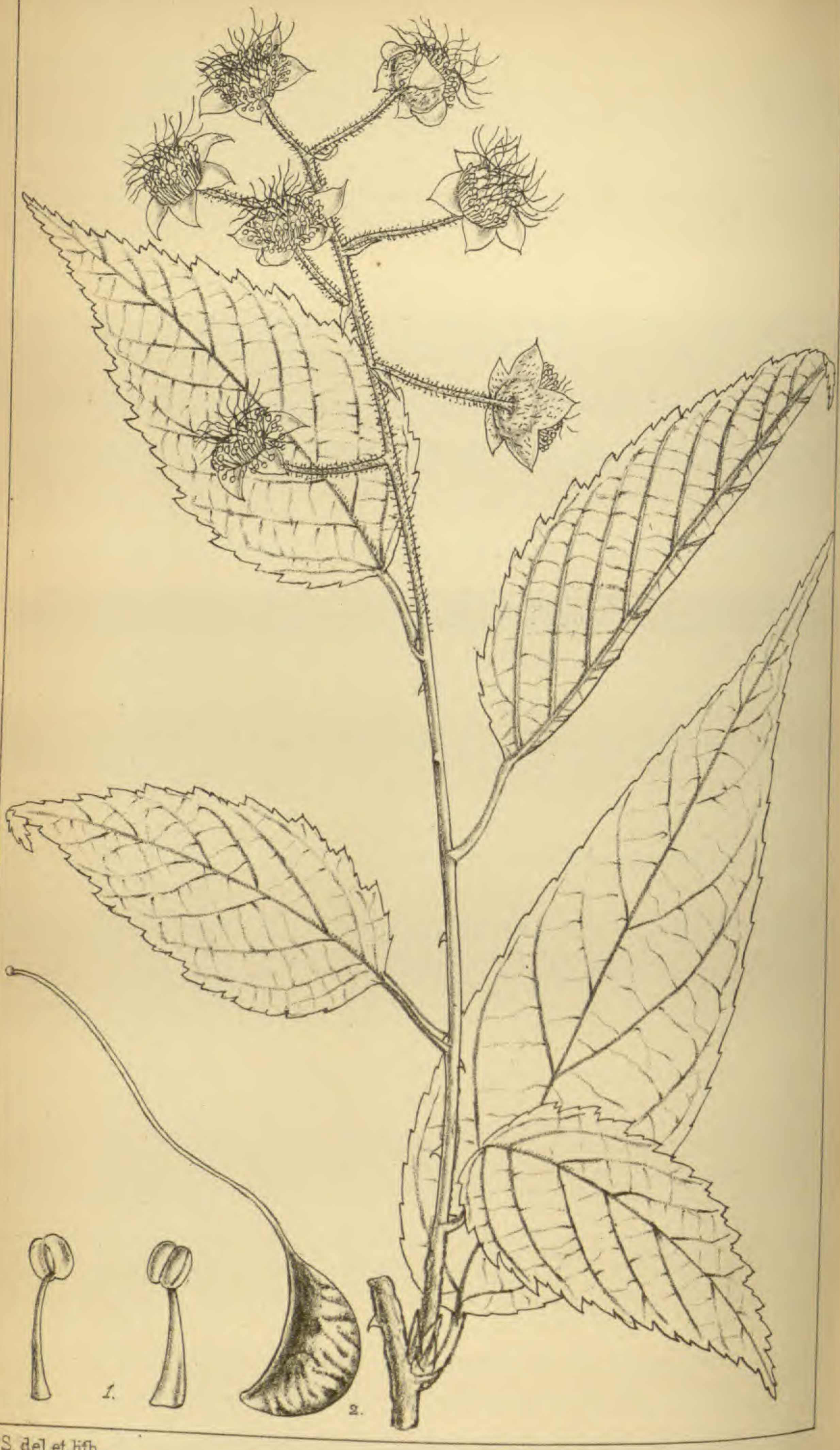
Herba perennis, glabrescens. *Scapus* nudus, 2–3 ped. altus, supra medium laxe pauciramosus, ramulis paucisquamosis monocephalis. *Folia* petiolata, papyracea, discoloria, subtus præcipue secus costam pilis longis multicellulatis coloratis instructa, 8–20 poll. longa, insigniter lyrato-pinnatifida, lobo terminali ovato longissime acuminato, 5–10 poll. longo, obscure pauci-lobato simul remote calloso-denticulato, lobis lateralibus parvis (maximis semi-poll. longis vel latis) segregatis oblique rotundatis calloso-apiculatis deorsum gradatim minoribus. *Capitula* graciliter pedunculata, fructifera circiter 1 poll. diametro; involucri bracteæ exteriores puberulæ, ciliolatæ, ovatæ, vix acutæ, interiores lineares, fere glabræ, apice ciliolatæ. *Achænia* fusco-atra; pappus patens.

In habit and in the coarse hairs on the leaves, as well as in the involucre, this resembles some of the Mutisiaceæ more than the Cichoriaceæ.

The genus is named after the discoverer, the Rev. Ernst Faber, a German missionary, who has collected in various parts of China, and whose collection from Mount Omei, whence the present plant was obtained, contains a considerable number of novelties.

Schultz-Bipontinus proposed a genus *Fabera*, but he had been anticipated by D. Don's *Seriola*, now reduced to *Hypochæris*.—W. B. HEMSLEY.

Fig. 1. An involucral bract. 2. A flower. 3. An achene. *All enlarged.*



M.S. del. et lith.

Rubus hupehensis, Oliv.

Plate 1816.

RUBUS HUPEHENSIS, *Oliv.*

Rosaceæ. Tribe Rubeæ.

R. hupehensis, *Oliv.* (*sp. nov.*) ; frutex prostratus, ramis gracilibus teretibus parce lanatis deinde glabris aculeis paucis brevibus recurvis, foliis simplicibus petiolatis oblongo-lanceolatis acuminatis basi rotundatis inæqualiter serratis serrulatisve supra costa puberula excepta glabrata, subtus cano-tomentellis, inflorescentia terminali breviter racemiforme pauci (saepius 3-7)-flora tomentella setuloso-glandulosa parce aculeolata, pedicellis divaricatis flore longioribus, calyce 5-fido basi intruso dense cano-tomentoso atque setuloso, petalis 0. v. parvis obovato-ellipticis unguiculatis caducis, carpellis fructiferis immaturis glabris obscure oblique rugulosis.

Hab. China, Prov. Hupeh, Nan-t'o district; only one specimen seen, *Dr. A. Henry* (No. *3931).

Folia 3–4½ poll. longa, 1–1½ poll. lata; petiolus ¼–½ poll. longus. *Pedicelli* ¾–1 poll. longi. *Stylus* gracilis elongatus.— D. Oliver.

Fig. 1. Stamens. Immature fruit-carpel. *Enlarged.*

M. S. del. et lith.

Holbœllia cuneata, Oliv.

Plate 1817.

HOLBŒLLIA CUNEATA, *Oliv.*

Berberideæ. Tribe Lardizabaleæ.

H. cuneata, *Oliv.* (*sp. nov.*); prostrata, ramis elongatis teretibus lævibusque, foliis trifoliolatis longe petiolatis supra glabris, foliolis lateralibus oblique semiovatis acutis basi cuneatis, f. centrali obovato vel rhomboideo acuto basi in petiolulum cuneatim angustato, racemis ♂ solitariis quasiaxillaribus e basi floriferis, bracteis ovato-lanceolatis pedicello multo brevioribus, sepalis viridibus oblongo-linearibus marginibus involutis subtrinerviis andrœcio 3–5-plo longioribus, petalis minutis carnosis cuneato-rotundatis, antheris extrorsis filamento carnosulo æquilongis connectivo carnoso apice breviter obtuse producto, racemis fructiferis elongatis baccis ellipsoideis subsessilibus.

Hab. China, Prov. Hupeh, Nan-t'o (fl. ♂) and Patung (sp. fruct.) districts, *Dr. A. Henry* (3830, 4887).

Foliola 3–4 poll. longa; petiolus 4–7 poll. longus. *Racemi* (fl. ♂ 3–5 poll. longi (fruct. pedunculati), 8–14 poll. longi. *Baccæ* ½–¾ poll. longæ.

I should judge the plant to be dicœcious. Though I see no reasonable ground to doubt the identity of the ♂ and ♀ specimens, yet they are from different localities, and in the fruiting specimen (we have no ♀ flowers) the older leaves are minutely hoary-canescent beneath with dark reticulation, the racemes very long and pedunculate, and the solitary or ternate fruit-carpels all but sessile. The carpels are very different from those of the Himalayan *H. latifolia*, Wall.—D. Oliver.

Fig. 1. Flower. 2. Sepal. 3. Flower, sepals removed. 4. Seed. 5. Longitudinal section of same. 6. Embryo. *Enlarged.*

M.S. del, et lith.

Cardamine paradoxa, Hance.

PLATE 1818.

CARDAMINE PARADOXA, *Hance.*

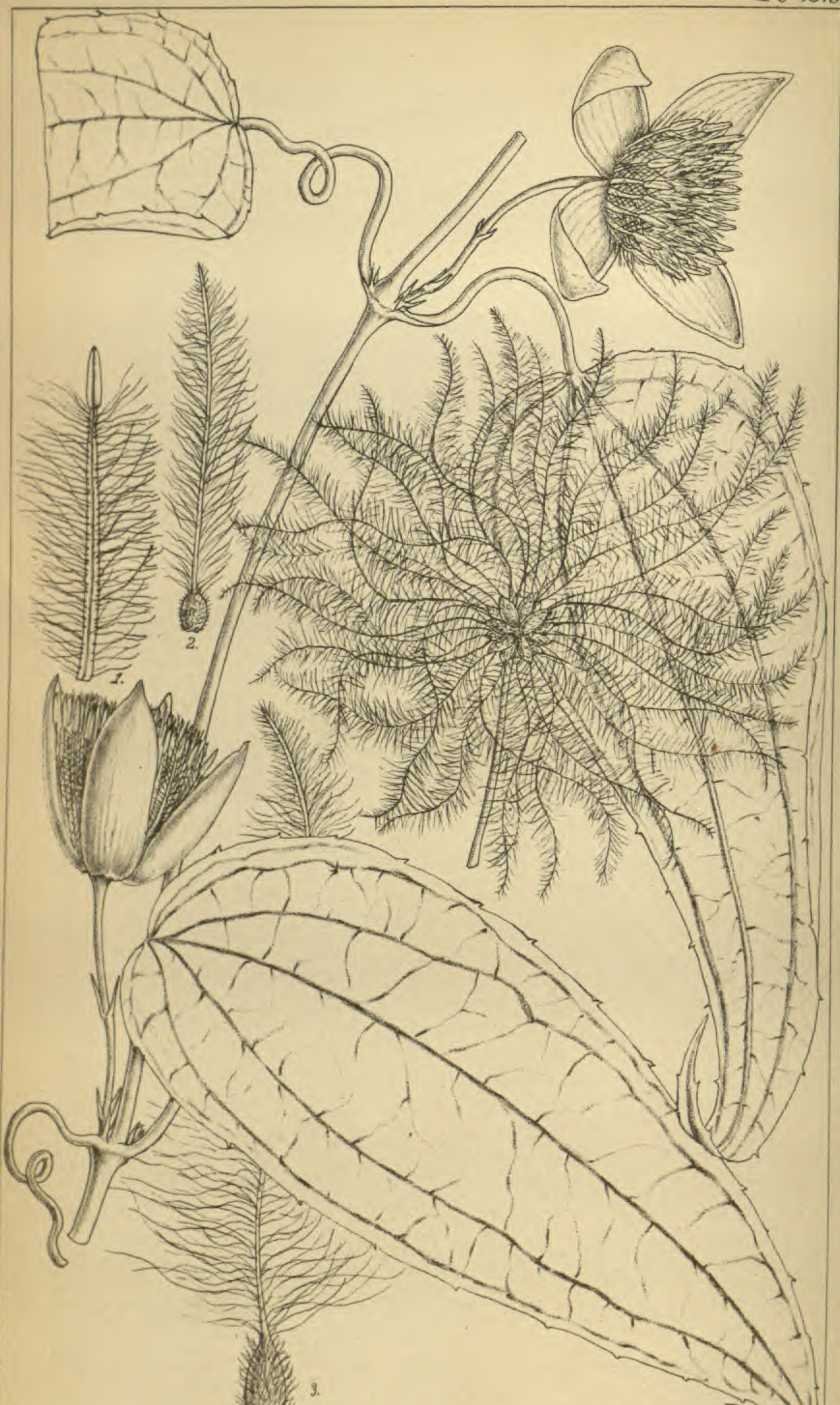
CRUCIFERÆ.

C. **paradoxa**, *Hance*, in *Journ. Bot.* vi. (1868), 111. To description given in 'Icones Plantarum,' pl. 1285, add: siliquis brevissime stipitatis fusiformibus sæpius monospermis apice stylo persistente subulato terminatis; seminibus oblongo-ellipsoideis cotyledonibus incumbentibus.

HAB. In addition to Mr. Sampson's locality cited by Dr. Hance, Prov. Hupeh, Ichang, *Dr. A. Henry* (No. 4199).

Now that through Dr. Henry's kindness we possess good fruiting specimens of this plant, here figured under its old name, comparison is suggested with the curious Crucifer figured in this work, Pl. 1719, as a doubtful Nasturtium, also received from Dr. Henry. They agree in their 1- or few-seeded fruits and the accumbent cotyledons, so that I think they may well be regarded as congeneric, and rejected from *Arabideæ*, either taking rank as a new genus, or for the present transferred to *Sisymbrium*, in which genus they would be exceptional in their solitary or few seeds; in Dr. Henry's specimens, however, 4 or 7 ovules occur.—D. OLIVER.

Fig. 1. Flower. 2. Ovary. 3. Same laid open. 4. Embryo. 5. Section of same. *All enlarged.*



M.S. del, et lith.

Clematis Henryi, Oliv.

PLATE 1819.

CLEMATIS HENRYI, *Oliv.*

RANUNCULACEÆ. Tribe CLEMATIDEÆ.

C. Henryi, *Oliv.* (*sp. nov.*); scandens, foliis simplicibus petiolatis ovato-oblongis breviter acuminatis basi cordatis remote denticulato-serrulatis 3–5-nerviis submembranaceis supra glabris subtus præcipue in costis parce pilosulis glabrisve, floribus majusculis axillaribus solitariis, pedunculo petiolo subæquilongo, sepalis oblongo-ellipticis acutatis eburneis, v. dorso pallide carneis, filamentis anguste linearibus longe pilosis, antheris linearibus brevibus minutissime apiculatis, carpellis fructiferis hirtis plumoso-caudatis.

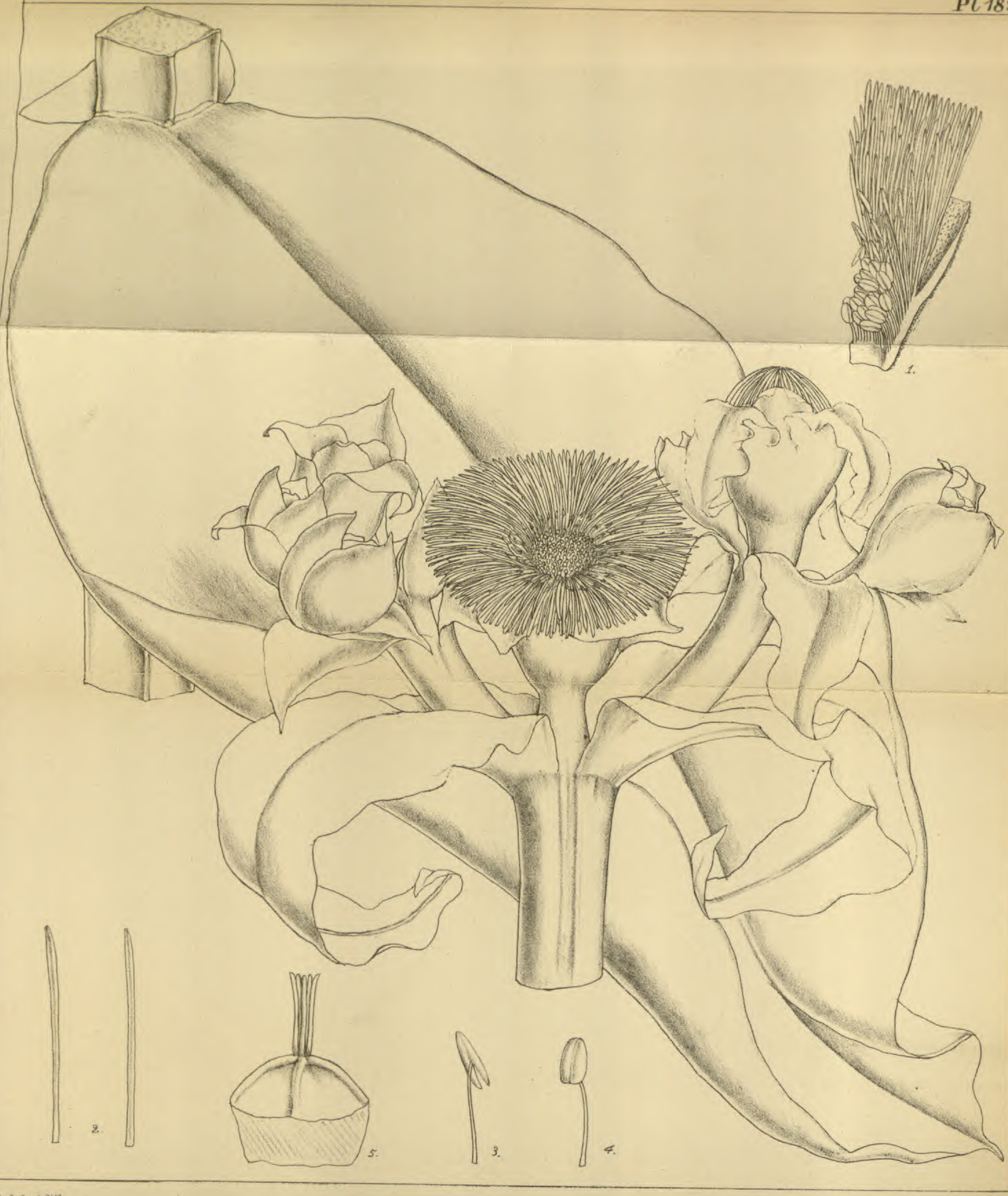
HAB. China, Prov. Hupeh, Ichang, *Dr. A. Henry* (266, 3280).

Folia $3\frac{1}{2}$–5 poll. longa, $1\frac{1}{2}$–$2\frac{1}{3}$ poll. lata; petiolus 1–3 poll. longus. *Flores* 1 poll. longi, sepalis demum reflexis.

Dr. Henry wrote in 1887 that the previous winter the flowers were noticed peeping out of the snow. His flowering specimens were gathered early in February.—D. OLIVER.

Fig. 1. Stamen. 2. Carpel. 3. Fruit-carpel. *Enlarged.*

Pl 1820.



M.S. del, et lith.

Mesembryanthemum Barklyi, N.E.Br.

Plate 1820.

MESEMBRYANTHEMUM BARKLYI, *N. E. Brown.*

Ficoideæ. Tribe Mesembryeæ.

M. Barklyi, *N. E. Br.* (*sp. nov.*); glabra, robustissima; caule centrali erecto, apice florifero, basi verticillatim ramoso, ramis procumbentibus, plus minus tetragonis; foliis sessilibus, maximis, ovato-lanceolatis acutis, carnosis, viridibus, minute papulosis; pedunculis erectis, trichotome cymosis, bracteatis, bracteis ovatis acutis, foliiformibus; pedicellis brevibus, crassis; calyce pyriformi, quinquifido, lobis inæqualibus ovatis acutis, tribus majoribus; petalis pluriseriatis, linearibus, roseis; staminibus erectis, antheris luteis; stylis 5, subulatis, erectis.

Hab. Namaqualand, *Sir Henry Barkly*.

Caulis bipedalis, ramulis 3–4 ped. longis, 1–1½ poll. crassis. *Folia* 6–15 poll. longa, 4–6 poll. lata. *Pedicelli* ¼–½ poll. longi. *Flores* subbipollicares; calycis lobi exteriores 1 poll. longi, ¾ poll. lati.

This is the largest species of *Mesembryanthemum* that has yet been discovered, and appears to have no very great similarity with any other known species, but, of those described, it seems to rank nearest to *M. crystallophanes*, Eckl. According to Sir Henry Barkly, 'the main stem reaches a height of two feet, branching out into flower-stalks at the top, whilst near its base a whorl of branches spring out, running for a foot or two along the ground, and then sending up upright flower-stalks.' Sir Henry Barkly also states that he 'measured the procumbent ligneous stem at a distance of over a yard from the main stem, and found it exactly 4½ inches in circumference. It is very light, and is used by the natives for fuel. The leaves are so juicy that it not only furnishes the cattle with moisture in that dry country, but is used by Europeans in travelling for the purpose of washing, and even drinking, the water squeezed out being devoid of taste.' The flowers only open at noon.—N. E. Brown.

Fig. 1. Portion of calyx-tube, showing insertion of petals and stamens. 2. Petals. 3. Upper and (4) lower stamens. 5. Ovary and styles. *All enlarged.*

M.S. del. et lith.

Ranunculus macropetalus, D.C.

PLATE 1821.

RANUNCULUS MACROPETALUS, *DC.*

RANUNCULACEÆ. Tribe RANUNCULEÆ.

R. macropetalus, *DC.*, *Prodr.* i. 29; perennis elatus, foliis radicalibus suborbiculatis præcipue apicem versus crenato- v. deltoideo-dentatis flabellatim nervosis lamina glabra margine piloso-ciliata, petiolo late alato apice in appendicem liguliformem obtusum producto, caule folioso glabro v. laxe piloso, foliis (phyllodiis) caulinis superioribus amplexicaulibus ovatis v. obovatis apicem versus inæqualiter lobatis crenato-dentatisve interdum rotundato-dilatatis glabratis v. parce villosis areolatim depresso-venosis, pedunculis bracteatis, floribus amplis late globoso-campanulatis, sepalis late ellipticis appresse villosis interdum deinde glabratis, petalis late obovato- vel cuneato-rotundatis calyce longioribus supra unguem foveola transversa semilunari munitis, carpellis numerosissimis pallidis sublævibus stylo gracili ovario subæquilongo rostratis.

HAB. Peru, *Ruiz and Pavon*; Muña, *Mr. Pearce* (No. 525), *Mr. Davis* (No. 202).

Herba 2–4-pedalis. *Folia* radicalia (v. inferiora caulina ?) lamina 6–8 poll. longa atque lata; petiolus elongatus $\frac{1}{2}$–$1\frac{1}{4}$-ped. longus apicem versus 2–$2\frac{1}{2}$ poll. latus. *Flores* 2–$3\frac{1}{2}$ poll. lati. *Petala* $1\frac{1}{2}$–2 poll. longa.

We are indebted to the liberality of Messrs. Veitch for a fine set of specimens of this noble Ranunculus, which has not yet, to my knowledge been successfully introduced into cultivation.

I identify the species simply from the description given by De Candolle and Weddell ('Chloris Andina,' ii. 305); *R. Raimondii*, Wedd. (*l. c.*), I think probably may be the same. It is the species which M. Raimondi says is administered by the Indians to their children 'pour les faire parler plus promptement.' I am uncertain as to the colour of the flower: 'petalis rubentibus (?)' is stated by Weddell in his description of *R. Raimondii*, and the word *reddish* occurs on Mr. Pearce's label, but it is not clear that it applies to the flowers.—D. OLIVER.

Fig. 1. Base of petal, with nectary. 2. Stamen. 3. Carpel. *Enlarged.*

Hemsleya chinensis, Cogn.

Plate 1822.

HEMSLEYA CHINENSIS, *Cogn.*

Cucurbitaceæ. Tribe Zanonieæ.

Hemsleya, *Cogniaux* (*gen. novum*). *Flores* dioici, paniculati. *Fl. masculi*: *Calyx* rotatus 5-gibbosus profunde 5-partitus segmentis lanceolatis elongatis satis inæqualibus. *Corolla* rotata fauce villosa tenuiter membranacea usque ad basin 5-partita, segmentis oblongis apice rotundatis. *Stamina* 5 libera per paria leviter approximata, filamentis subnullis, basi paulo distantibus; antheræ minutæ lineari-oblongæ uniloculares dorso paulo supra basin insertæ. *Fl. feminei* minores: (*Calyx* lobis deltoideo-subulatis petalis brevioribus, petalis oblongo-ellipticis breviter acuminatis 2 lin. longis; ovarium clavato-cylindricum apice subtruncatum; styli brevissimi dissiti, stigmatibus bipartitis brevibus anguste linearibus.—D. O.) *Fructus* late clavatus ut videtur teres, apice late truncato, trivalvis polyspermus. *Semina* pendula dense imbricata, anguste ovata, compressa utrinque facie minute tuberculata, ala membranacea basi apiceque dilatata cincta; testa crustacea.—Herba *scandens, fere glaberrima.* Folia *petiolata pedato-7-foliolata foliolis eglandulosis remote crenulatis.* Cirrhi *simplices vel bifidi.* Flores *masculi magni flavidi, pedunculo pedicellisque capillaceis.* Fructus *mediocris.*

H. chinensis, *Cogniaux* (*sp. unica*).

Hab. China, Prov. Hupeh, Patung and Nan-t'o districts, *Dr. A. Henry* (Nos. 2436, 4452, 4771). 7,000 ft., Mount Omei, Szechwan, *Rev. E. Faber* (No. 275).

Ramuli gracillimi, profunde sulcati. *Petiolus* gracilis 1–2½ poll. longus; petioluli ⅙–½ poll. longi. *Foliola* tenuiter membranacea oblonga v. lanceolata, breviter acuminata, basi acuta, medianum 3–4½ poll. longum, 1–1½ poll. latum, lateralia satis minora. *Paniculæ* diffusæ plurifloræ, tenuissime puberulæ; pedicelli (fl. ♂) ¼–⅓ poll. longi. *Calyx* segmentis trinervulosis, acuminatis, ⅙–¼ poll. longis. *Petala* multinervulosa, ½ poll. longa, ¼–⅓ poll. lata. *Antheræ* divergentes. *Fructus* pallidus longitudinaliter viridi-striatus 1–1¼ poll. longus, superne ½ poll. crassus, basi in pedicellum attenuatus. *Semina* fuscescentia, ala pallida plus minusve translucens, basi sæpius profunde bifida, apice rotundata ½ poll. longa.

The genus *Hemsleya* is allied to *Alsomitra*, from which it differs in its herbaceous habit, much larger flowers, the corolla-segments separated to the base. Moreover, the seeds are wholly different; in

Pl 1823

M.S. del et lith.

Emmenopterys Henryi, Oliv,

Plate 1823.

EMMENOPTERYS HENRYI, *Oliv.*

RUBIACEÆ. Tribe CINCHONEÆ.

Emmenopterys, *Oliv.* (*gen. nov.*) *Calyx* limbo 5-partito circumscisse deciduo, lobis brevibus late rotundatis ciliatis imbricatis vel lobo unico persistente in lamina ampla albo-colorato petiolato producto. *Corolla* infundibularis basi in tubum angustum cylindricum attenuata extus cano-tomentella, lobis æstivatione imbricatis ovatis obtusis intus crispato-pilosulis. *Stamina* 5 tubo faucem versus inserta inclusa; antheræ oblongo-ellipticæ dorso infra medium affixæ, biloculares, longitudinaliter dehiscentes. *Ovarium* biloculare; stylus gracilis indivisus apice tantum bilobulatum. *Fructus* ovali-fusiformis v. anguste ellipsoideus, inappendiculatus v. passim appendice foliacea petiolata tenuiter coriacea coronatus, bilocularis; pericarpium tenue coriaceum lateraliter bisulcatum læve. *Semina* numerosissina verticalia arcte imbricata irregulariter alata præcipue in nucleo reticulato-areolata.—Arbor 30–40-*pedalis*, *glabra*. Folia *opposita petiolata late elliptica breviter apiculata basi cuneata integerrima tenuiter coriacea*, 4–6 *poll. longa*, $2\frac{1}{4}$–4 *poll. lata*; *petiolus* 1–2 *poll. longus*. Stipulæ *caducissimæ*. Inflorescentia *terminalis multiflora*, *cymis corymbosim paniculatis*. Corolla *flava* 1 *poll. longa*. Fructus $1\frac{1}{2}$ *poll. longus*, $\frac{1}{2}$ *poll. latus*.

E. Henryi, *Oliv.* (*sp. unica*).

HAB. China, Prov. Hupeh, Patung district, *Dr. A. Henry* (Nos. 4857, 4999, 5196).

Another of Dr. Henry's highly interesting additions to the flora of Central China. Technically its affinity I take to be with the Himalayan genus *Luculia*, which, however, is very different both in form of calyx-limb, and absence of coloured accrescent lobe, form of corolla, and style. It agrees in the early-deciduous stipules and calyx-limb. The conspicuous *Mussænda*-like appendix is white and persists until the fruit is ripe, apparently serving the double function of an attractive organ at the time of flowering, and a sail to the falling fruit. Apparently about one flower in each cymule of the inflorescence is thus appendaged. The appendix is about $1\frac{1}{2}$–2 inches long, $\frac{3}{4}$–$1\frac{1}{4}$ inch broad, on a petiole of nearly the same length.

In the æstivation of the corolla (I have had only one good bud) I find two lobes exterior and two interior, one intermediate. The two interior have each a lateral appendix or auricle which overlaps a margin of each of the exterior lobes.—D. OLIVER.

Figs. 1. Ovary and style. 2. Bud. 3. Corolla laid open. 4. Transverse section of ovary. 5. Seeds. 6. Longitudinal section of albumen, showing embryo. *All enlarged.*

M.S del, et lith

Ficus foveolata, Wall, var. Henryi.

PLATE 1824.

FICUS FOVEOLATA, *Wall. var.* HENRYI.

URTICACEÆ. Tribe ARTOCARPEÆ.

F. foveolata, *Wall. var.* Henryi, *G. King, MSS.*; receptaculis sessilibus ovoideis parce villosis foramine dentibus 4–5 lanceolatis erectis brevibus coronatis, basi 2–3-bracteatis, bracteis ovatis ovato-lanceolatisve receptaculo multo brevioribus.

HAB. China, Prov. Hupeh; Ichang, *Dr. A. Henry* (No. 3552 A).

Receptacula $\frac{1}{3}$—$\frac{1}{2}$ poll. longa.

Dr. Henry sends also the small globose-fruited form of the species; Dr. King's var. *nipponica*. What may be the relations subsisting between these forms, both of which are here figured, I am not prepared to say from dried material. The foliage is identical in the two forms. The species is copiously illustrated in Dr. King's noble Iconography of *Ficus* (plates 166 to 168).—D. OLIVER.

Fig. 1. Longitudinal section of receptacle, the florets removed. 2. Staminate floret. 3. Anthers. 4. Pistillate floret. 5. Longitudinal section of empty receptacle of the form *nipponica* (of which a fruiting branch is figured). *Details enlarged.*

M. S. del. et lith.

Staurochlamys Burchellii, Baker.

Plate 1825.

STAUROCHLAMYS BURCHELLII, *Baker.*

Compositæ. Tribe Helianthoideæ.

Staurochlamys, *Baker* (gen. novum). *Capitula* heterogama radiata, floribus radii fœmineis fertilibus, disci hermaphroditis fertilibus. *Involucrum* triplex, bracteis 2 exterioribus parvis foliaceis, centralibus 2 magnis rotundatis foliaceis, interioribus 4 rigidulis linearibus. *Receptaculum* planum, paleis magnis complicatis flores amplectentibus onustum. *Corollæ* tubo cylindrico, limbo in floribus radii patulo, segmentis tribus oblongis, in floribus disci campanulato, segmentis 5 ovatis. *Antheræ* basi haud caudatæ. *Styli* rami breves, apice stigmatoso truncati. *Achænia* cylindrico-tetragona calva.

S. Burchellii, species sola.

Hab. Porto Real, North Brazil, *Burchell*, 8679–6.

Herba annua erecta laxe ramosa, ramulis gracilibus ascendentibus pubescentibus. *Folia* opposita breviter petiolata oblongo-lanceolata membranacea subintegra trinervata. *Capitula* ad ramulorum apices solitaria, pauciflora, pedunculis gracilibus elongatis. *Bracteæ* foliaceæ centrales rotundatæ 3–4 lin. latæ. *Corollæ* luteæ $1\frac{1}{2}$–2 lin. longæ. *Achænia* glabra $1\frac{1}{2}$ lin. longa.

Allied to *Elvira* and *Melampodium*.—J. G. Baker.

Fig. 1. Foliaceous bracts of the involucre. 2. Paleæ of the receptacle. 3. An inner paleaceous bract of the involucre. 4. Flower of the ray. 5. Flower of the disk. 6. Stamens. 7. Apex of the style. *All more or less enlarged.*

VOL. IX.—PART II.] [FEBRUARY.

HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS, OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

THIRD SERIES.

EDITED BY

SIR JOSEPH DALTON HOOKER, K.C.S.I., C.B., M.D., F.R.S.

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OR VOL. XIX. OF THE ENTIRE WORK.

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M. S. del. et lith.

Microstylis Maingayi, Hook. f.

Plate 1826.

MICROSTYLIS MAINGAYI, *Hook. f.*

Orchideæ. Tribe Malaxeæ.

M. Maingayi, *Hook. f.* (*sp. nov.*); folio solitario radicali amplo sessili late elliptico acuto multinervi basi scapum amplectente, scapo brevi, racemo elongato multifloro, bracteis lanceolatis inferioribus elongatis vacuis, floriferis ovario brevioribus, floribus resupinatis, sepalis oblongis obtusis marginibus incurvis, petalis angustis, labello cuneato-oblongo nervoso apice truncato lacero marginibus denticulatis, columna longiuscula.

Hab. Penang, *Maingay* (*Kew Distrib.* No. 1602).

Caules conferti, brevissimi, post anthesin pseudobulbosi, vaginis elongatis membranaceis v. foliosis, radicibus robustis. *Folium* 4–6 poll. longum, 2–3 poll. latum, membranaceum. *Scapus* una cum racemo laxifloro folio subæquilongo teres, pedicellis $\frac{1}{2}$ poll. longis. *Flores* $\frac{1}{2}$ poll. lati; labello porrecto coriaceo.

Var. ? *Kunstleri*, labello longiore angulis exterioribus fimbriatis.

Hab. Malay Peninsula, at Perak, alt. 3,500, *King's Collector* (*Kunstler*).

Flores saturate cœrulei.

I am in doubt whether to refer this to *Microstylis* or to *Liparis*. The column is rather long for the former genus, but not more so than in *M. Rheedii* and other species, in which also the dilatation of the apex is obscure or wanting.—J. D. Hooker.

Fig. 1. Flower. 2 and 3. Sepals. 4. Lip. *All enlarged.*

M.S. del. et lith.

A. Microstylis furcata, Hook. f.
B. ——— parvula, Hook. f.

Plate 1827.

A.—MICROSTYLIS FURCATA, *Hook. f.*

B.—MICROSTYLIS PARVULA, *Hook. f.*

Orchideæ. Tribe Malaxeæ.

A.—**M. furcata,** *Hook. f.* (*sp. nov.*); folio solitario radicali sessili ovato-lanceolato acuminato, scapo folio longiore, racemo laxifloro, bracteis lanceolatis ovario subæquilongis, floribus parvis, sepalis late ovatis obtusis concavis 1-nerviis, petalis linearibus subacutis, labello anguste panduriformi ad medium v. infra 2-lobo, sinu subacuto cum apiculo, lobis lineari-oblongis falcatis marginibus exterioribus serrulatis, apicibus truncatis laciniatis, columnæ alis rotundatis.

Hab. Malay Peninsula, Perak, *Father Scortechini.*

Caules brevissimi, fastigiati, demum pseudobulbosi, ovoideo-globosi, vaginati. *Folium* 2–3 poll. longum, 5–nerve, basi scapum amplectente. *Scapus* cum racemo 5–6-pollicaris, gracilis, laxiflorus. *Flores* $\frac{1}{10}$ poll. lati; labello sepalis duplo longiore, lobis divergentibus.—J. D. Hooker.

B.—**M. parvula,** *Hook. f.* (*sp. nov.*); folio solitario radicali sessili ovato-lanceolato acuminato, scapo folio multoties longiore, racemo laxifloro, floribus minutis, bracteis minutis lanceolatis, sepalis ovato-rotundatis obtusis concavis 1–nerviis, petalis anguste-linearibus, labello late ovoideo apice in lobos 2 subulatos divergentibus fisso, disco tricarinato, columnæ alis rotundatis.

Hab. Malay Peninsula, at Perak, on rocks, alt. 3,000–4,000 ft., *King's Collector.*

Nearly allied to *M. furcata*, but a much smaller plant, with flowers hardly $\frac{1}{12}$ in. diam. The lip is cellular, with a rounded keel at the back.—J. D. Hooker.

A.—M. furcata. Fig. 1. Flower. 2. Sepal. 3. Petal. *All enlarged.*
B.—M. parvula. Fig. 4. Flower. 5. Back view of lip. *Both enlarged.*

M. S. del. et lith

Ranunculus calandrinioides, Oliv.

Plate 1828.

RANUNCULUS CALANDRINIOIDES, *Oliv.*

Ranunculaceæ. Tribe Ranunculeæ.

R. calandrinioides, *Oliv.* (*sp. nov.*); perennis 4–6 pollicaris, fibris radicalibus longiusculis carnosulis, foliis conformibus ovali-lanceolatis acutiusculis basi in petiolum canaliculatum angustatis integris glabris v. margine parce et laxe pilosis tenuiter carnosulis longitudinaliter 3–5-nervosis nervis supra haud prominulis subdepressisve, radicalibus longe petiolatis, caulibus quam folia radicalia brevioribus 1–3-floris, floribus majusculis breviter pedunculatis albis purpureo tinctis, sepalis laxe adscendentibus coloratis oblongo-ellipticis glabris, petalis cuneato-obovatis obtusissimis integris retusisve tenuiter longitudinaliter venosis calyce 2–3-plo longioribus, receptaculo glabro, carpellis globoso-capitatis oblique ovoideis carnosulis glabris, stigmate sessile pulvinato.

Hab. Marocco, on Taurirt, 8,000–10,000 ft. alt., *I. Thomson*, Atlas Expedition, 1888.

Folia radicalia lamina $1\frac{1}{2}$–2 poll. longa, 6–8 lin. lata; petiolus $1\frac{1}{2}$–4 poll. longus. *Flores* 1–$1\frac{1}{2}$ poll. diam.; pedunculo $\frac{1}{2}$–$\frac{3}{4}$ poll. longo crassiusculo glabro, fructifero erecto. *Petala* 10–12 lin. longa; foveola nectarifera squamula oblonga integra v. apice bidentata tecta.

A very interesting and beautiful addition to the genus, resembling *R. pyrenæus*, L., var. *plantagineus*; nearly allied also to *R. parnassifolius*, L.

So far as I can judge from the dried flowers, the petals are whitish, finely purple-veined, probably passing into yellowish in the claw.—D. Oliver.

Fig. 1. Petal. 2. Stamen. 3. Carpel. 4. Same, more advanced. *All enlarged.*

M.S. del, et lith.

Cnonis Thomsoni, Ball.

Plate 1829.

ONONIS THOMSONI, *Ball.*

Leguminosæ. Tribe Trifolieæ.

O. Thomsoni, *Ball. MSS.* (*sp. nov.*); herba pube brevi canescente vestita, ramis adscendentibus laxe florigeris, foliis brevibus pinnatim 7–9-foliolatis, foliolis approximatis hirtis sessilibus oblongo- v. ovato-ellipticis induplicatis utrinque 3–4-dentato-serratis, stipulis oblique ovatis acute dentatis valide flabellatim nervosis, racemis erectis laxis pauci- v. plurifloris, pedicellis erectis glanduloso-pilosulis flore longioribus infra apicem articulatis, calycis lobis anguste linearibus glanduloso-pilosis tubo duplo longioribus, vexillo brevioribus.

Hab. Marocco, Atlas Expedition, *I. Thomson*, 1838. (The label having gone astray, I cannot give the precise locality.)

Folia sessilia 3–5 lin. longa, 3–4 lin. lata. *Foliola* 2 lin. longa. *Flores* $\frac{1}{2}$ poll. longi; vexillum purpureo venosum.

I have seen only the detached specimen figured, so cannot be clear whether the plant is annual or not. The addition of the pinnate-leaved species to the genus, which is almost invariably trifoliolate, is very interesting.—D. Oliver.

Fig. 1 Leaf and stipule. 2. Flower, petals removed. 3. Vexillum. 4. Ala. 5. Carinal petal. 6. Pistil. 7. Longitudinal section of ovary. *Enlarged.*

M.S. del, et lith.

Microstylis lancifolia, Thw.

Plate 1830.

MICROSTYLIS LANCIFOLIA, *Thw.*

Orchideæ. Tribe Malaxeæ.

M. lancifolia, *Thwaites Enum.* 269; acaulis, ebulbosa, foliis 5–7 petiolatis elliptico-lanceolatis acuminatis 3-nerviis, scapo foliis longiore multibracteato, racemo multifloro, floribus parvis, bracteis lanceolatis erecto-patentibus, sepalis oblongis obtusis, petalis lineari-oblongis obtusis, labello parvo ambitu semicirculari pectinatim laciniato, disco depresso, columnæ alis patulis. *Ridley in Journ. Linn. Soc.* xxiv. 346.

Hab. Ceylon, in the Saffragam and Ambagamowa districts, *Thwaites.*

Cæspitosa, radicibus crassiusculis. *Folia* 2–4 poll. longa, $\frac{1}{3}$–$\frac{2}{3}$ poll. lata, in petiolum $\frac{1}{2}$–$1\frac{1}{4}$ poll. longum angustata. *Scapus* una cum racemo 4–6-pollicaris. *Flores* $\frac{1}{6}$ poll. lati; bracteæ floriferæ pedicello brevi subæquilongæ; sepala et petala 1-nervia. *Capsula* longa.

This, as Thwaites observes, resembles what would be a narrow-leaved petioled state of the common Nilghiri and Ceylon *M. versicolor*, with the bracts never deflexed.

There are known to me four I think quite distinct species of the section of *Microstylis* to which this belongs. They are: 1, *M. Rheedii*, Wight (*M. versicolor*, Lindl.), (Plate 1832), the type of the group; 2, *M. versicolor*, Wight Ic. 901 (not of Lindl., *M. pratensis*, Ridley), of which *M. luteola*, Wight, may be regarded as a large-flowered variety; 3, *M. Stocksii*, Hook. f. (Plate 1833), and *M. lancifolia*. There is also *M. crenulata*, Ridley (in *Journ. Linn. Soc.* xxiv. 346), of which there are no specimens at Kew. It has deflexed bracts and a crenulate lip.—J. D. Hooker.

Fig. 1. Flower. 2. Lip. 3. Fruit. *All enlarged.*

M.S. del, et lith.

Microstylis khasiana, Hook.f.

Plate 1831.

MICROSTYLIS KHASIANA, *Hook. f.*

Orchideæ. Tribe Malaxeæ.

M. (*Crepidium*) **khasiana,** *Hook. f.*; caule elongato vaginato, foliis 3–4 petiolatis ovatis ovato-lanceolatisve acuminatis, scapo gracili, racemo multifloro, bracteis lanceolatis patenti-recurvis ovarium æquantibus, sepalis oblongo-rotundatis obtusis concavis 3-nerviis, petalis linearibus obtusis, labelli auriculis latis erectis subacutis, lamina basi constricta apice rotundata v. retusa v. obcordata, columnæ alis rotundatis.

Hab. Eastern Bengal; on the Khasia Mountains, alt. 4,000 to 5,000 ft., *Lobb, &c.*

Caulis 1–2-uncialis. *Folia* 3–5 poll. longa, 5–7-nervia. *Scapus* una cum racemo spithameus v. brevior. *Flores* $\frac{1}{6}$ poll. lati, castaneo-rubri.

A near ally of the Himalaya and Khasia *M. Wallichii*, Lindl., which differs in the short bracts, larger flowers, and rounded blade of the lip, which is not contracted below the auricles.—J. D. Hooker.

Fig. 1. Flower. 2 and 3. Lips from other flowers. *All enlarged.*

3.

1.

2.

M. S. del et lith.

Microstylis, Rheedii, Wt.

Plate 1832.

MICROSTYLIS RHEEDII, *Wight.*

Orchideæ. Tribe Malaxeæ.

M. Rheedii, *Wight, Ic.* 902 (*non Auct.*); caule robusto vaginato, foliis 3–5 petiolatis late ovatis ellipticisve acutis, racemis elongatis angustis multi-laxi-floris, floribus parvis, bracteis lanceolatis deflexis, sepalis late ovatis obtusis 1-nerviis concavis, petalis anguste linearibus, labello latiore quam longo, rotundato reniformi v. flabelliformi pectinato disco basin versus depresso, columna longiuscula. *Dalz. & Gibs. Bomb. Fl.* 260 (*Excl. Syn.*). M. versicolor, *Lindl. Gen. & Sp. Orchid.* 216, *Wall. Cat. No.* 1939; *Ridley in Journ. Linn. Soc.* xxiv. 343. Liparis priochilus, *Lodd. Bot. Cab. t.* 1751? L. intermedia, *A. Rich. in Ann. Sc. Nat. Ser.* 2, xv. 17. Malaxis Rheedii, *Herb. Heyne.*—*Rheede Hort. Mal.* xii. t. 27.

Hab. The Deccan Peninsula; from the Concan southwards, common in the Ghats.

Caulis 3–6-pollicaris, gracilis v. robustus, stoloniferus. *Folia* 3–7 poll. longa, acuta v. acuminata, 5–7-nervia, petiolo late alato. *Scapus* cum racemo 6–12-pollicaris. *Flores* $\frac{1}{8}$–$\frac{1}{6}$ poll. lati, virides flavi v. purpurascentes, odori; sepala obtusa.

This is, as Wight perceived, unquestionably the *Basaala-Poulou-Maravara* of Rheede, upon which the *Malaxis Rheedii* of Heyne was founded, and with which the Javan and Pacific Island *M. plantaginea* (*Epidendrum resupinatum*, Forst.) has been confounded by all authors. It is admirably described by Rheede, even to the spiral vessels with which its tissues abound. It is a common Deccan plant, and rather variable in the form of the lip.—J. D. Hooker.

Fig. 1. Flower. 2 and 3. Lips from other flowers. *All enlarged.*

M. S. del, et lith.

Microstylis Stocksii, Hook. f.

Plate 1833.

MICROSTYLIS STOCKSII, *Hook. f.*

Orchideæ. Tribe Malaxeæ.

M. Stocksii, *Hook. f.*; caule elongato vaginato, fŏliis 2–3 sessilibus v. breviter petiolatis ovatis v. ovato-lanceolatis, bracteis lanceolatis deflexis, floribus majusculis, sepalis lateralibus oblongis obtusis 3-nerviis dorsali longiore et angustiore, petalis anguste linearibus, labello latiore quam longo latissime flabelliformi v. fere reniformi, profunde pectinato disco depresso, columnæ alis latiusculis subacutis. M. luteola, *Herb. Ind. Or. H. f. & T.* (*not of Wight*).

Hab. Malabar, in the Bababoodan hills, *Stocks*.

Caulis 1–2-pollicaris, robustus. *Folia* $1\frac{1}{2}$–3 poll. lata, 3–5-nervia. *Scapus* una cum racemo 2–4-pollicaris. *Flores* $\frac{1}{2}$ poll. lati.

In several respects intermediate between *M. versicolor* var. *lutea*, of which it has the large flowers but not the pseudobulbs, and *M. Rheedii*. It differs from both in the size of the flowers and remarkable fan-shaped lip.—J. D. Hooker.

Fig. 1. Flowers. 2. Dorsal, and 3. lateral sepals spread out. 4. Lip and column. *All enlarged.*

M.S. del, et lith.

Microstylis micrantha, Hook. f.

Plate 1834.

MICROSTYLIS MICRANTHA, *Hook. f.*

Orchideæ. Tribe Malaxeæ.

M. (*Crepidium*) **micrantha**, *Hook. f.* (*sp. nov.*); foliis 6–8-petiolatis ovato-lanceolatis subacutis 5-nerviis, scapo gracili multifloro, bracteis lanceolatis deflexis, floribus minutis, sepalis oblongis obtusis, petalis lineari-oblongis obtusis, labello subquadrato, auriculis erectis subacutis lamina pectinatim 8-dentata brevioribus, columnæ auriculis minutis.

Hab. Malay Peninsula; Perak, *Father Scortechini.*

Rhizoma repens, radicans. *Folia* alterna, 2–3 poll. longa, basi subacuta inæquali; petiolo alato, $\frac{1}{3}$–1 poll. longo. *Scapus* una cum racemo densifloro 7-pollicaris, teres, pedicellis brevibus bracteis multoties brevioribus. *Flores* $\frac{1}{12}$ poll. lati; sepala 3-nervia. *Labellum* paullo latius quam longum; laciniis subparallelis, 2 intimis non raro connatis.

I have seen but one specimen of this very well marked species, which differs from all other Indian ones of the section *Crepidium* in the very minute flowers.—J. D. Hooker.

Fig. 1. Flower. 2. Lip of another flower. *Both enlarged.*

M. S. del et lith.

Microstylis acutangula, Hook. f.

Plate 1835.

MICROSTYLIS ACUTANGULA, *Hook. f.*

Orchideæ. Tribe Malaxeæ.

M. (*Crepidium*) **acutangula**, *Hook. f.*; foliis breviter petiolatis lanceolatis acuminatis, vaginis latis cum lamina articulatis, scapo valido brevi, racemo elongato multifloro, bracteis lanceolatis deflexis pedicellis gracilibus brevioribus, floribus majusculis, sepalis oblongis obtusis, petalis anguste linearibus, labelli auriculis elongatis acuminatis lamina longioribus et latioribus angulis basi acutis, lamina brevi lata profunde pectinata, disco excavato, columnæ alis rotundatis.

Hab. Malay Peninsula; Perak, *Wray* (in *Herb. Calcutt.*).

Caulis brevis. *Folia* 4–7 poll. longa, 5–7-nervia, costa valida, vaginis pollicaribus amplis striato-nervosis. *Scapus* una cum racemo 8–12-pollicaris, ad basin fere floriferus; pedicelli $\frac{1}{2}$ poll. longi. *Flores* sub $\frac{1}{2}$ poll. longi, albi; sepala 3-nervia.

A very handsome species, closely allied to *M. plantaginea*, Steud. (M. Rheedii, *Lindl.* non *Wight*), which differs in the form of the lip.—J. D. Hooker.

Fig. 1. Flower. 2. Sepal. 3. Leaf from another flower. *All enlarged.*

M.S.del, et lith

Liparis Trimenii, Ridl.

Plate 1836.

LIPARIS TRIMENII, *Ridley*.

Orchideæ. Tribe Liparideæ.

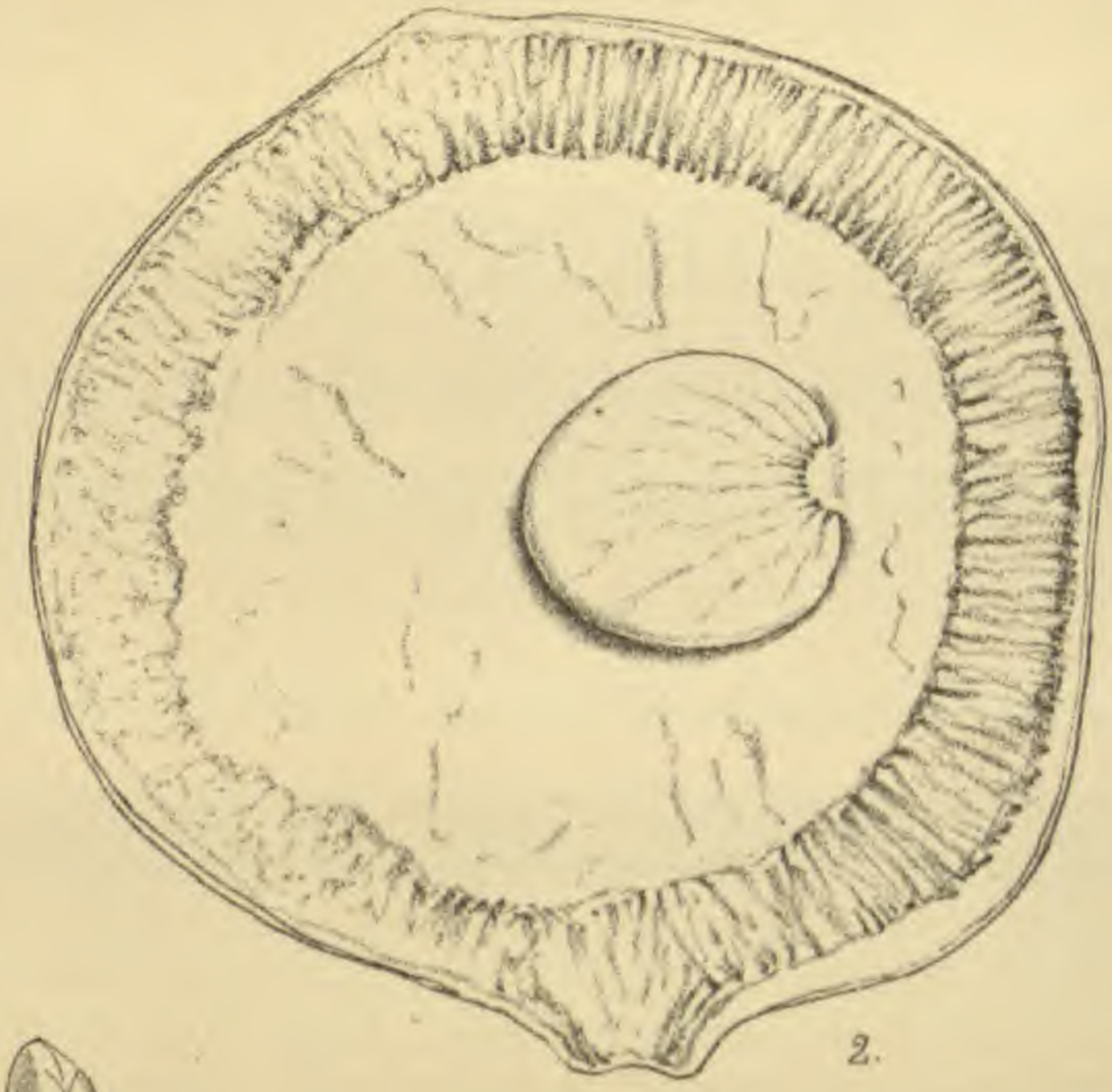
L. (*Mollifolia*) **Trimenii**, *Ridley in Journ. Linn. Soc.* xxiv. 350; parvula, foliis 2 ovato-lanceolatis acuminatis 5-nerviis, scapo elongato gracili tereti paucifloro, bracteis lanceolatis erecto-patentibus, sepalis oblongo-lanceolatis subacutis 3-nerviis, petalis anguste linearibus deflexis, labello plano patente late ovato-rotundato nervoso margine subundulato, callis ad basin 2 obscuris, columna elongata incurva, alis obsoletis.

Hab. Ceylon, at Hangkele, *Trimen*.

Pseudobulbi non visi. *Folia* 1–1½ poll. longa. *Scapus* una cum racemo 1–3-pollicaris, bracteis pedicellis subæquilongis. *Labellum* ¼ poll. longum. *Capsula* longa, ellipsoidea.

This belongs to the section of *Liparis* in which the leaves are membranous and not articulate with the sheath, and in which the lip is broad, flat, and neither decurved nor deflexed from the base. Its nearest ally is *L. Wightiana*, Thwaites (*L. atropurpurea*, Wight, Ic. 904, non Lindl.), from which it seems to me to differ only in the much smaller size, and less developed calli at the base of the lip. I have to thank Dr. Trimen for sending me the specimens from which the accompanying figure was made.—J. D. Hooker.

Fig. 1. Flower. 2. Bract and capsule. *Both enlarged.*



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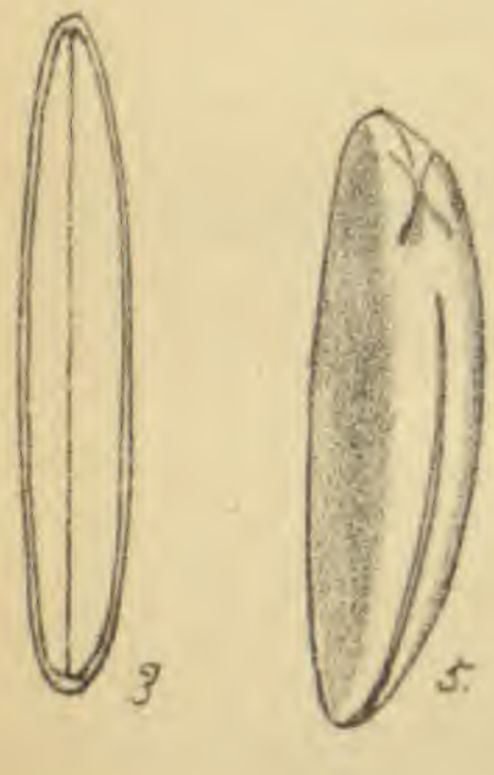

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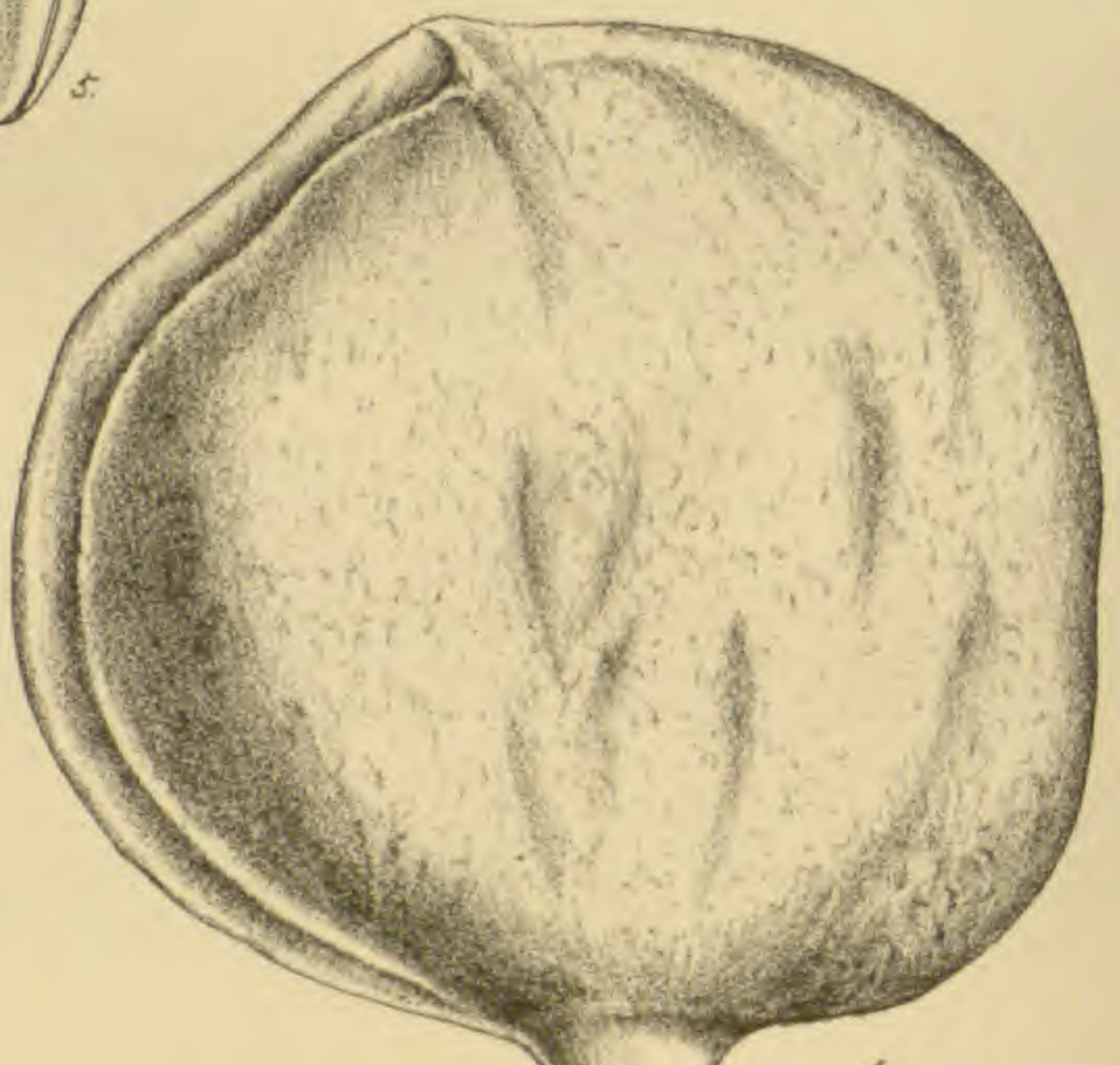


1.

M.S. del, et lith.

Inocarpus edulis, Forst.

Plate 1837.

INOCARPUS EDULIS, *Forst.*

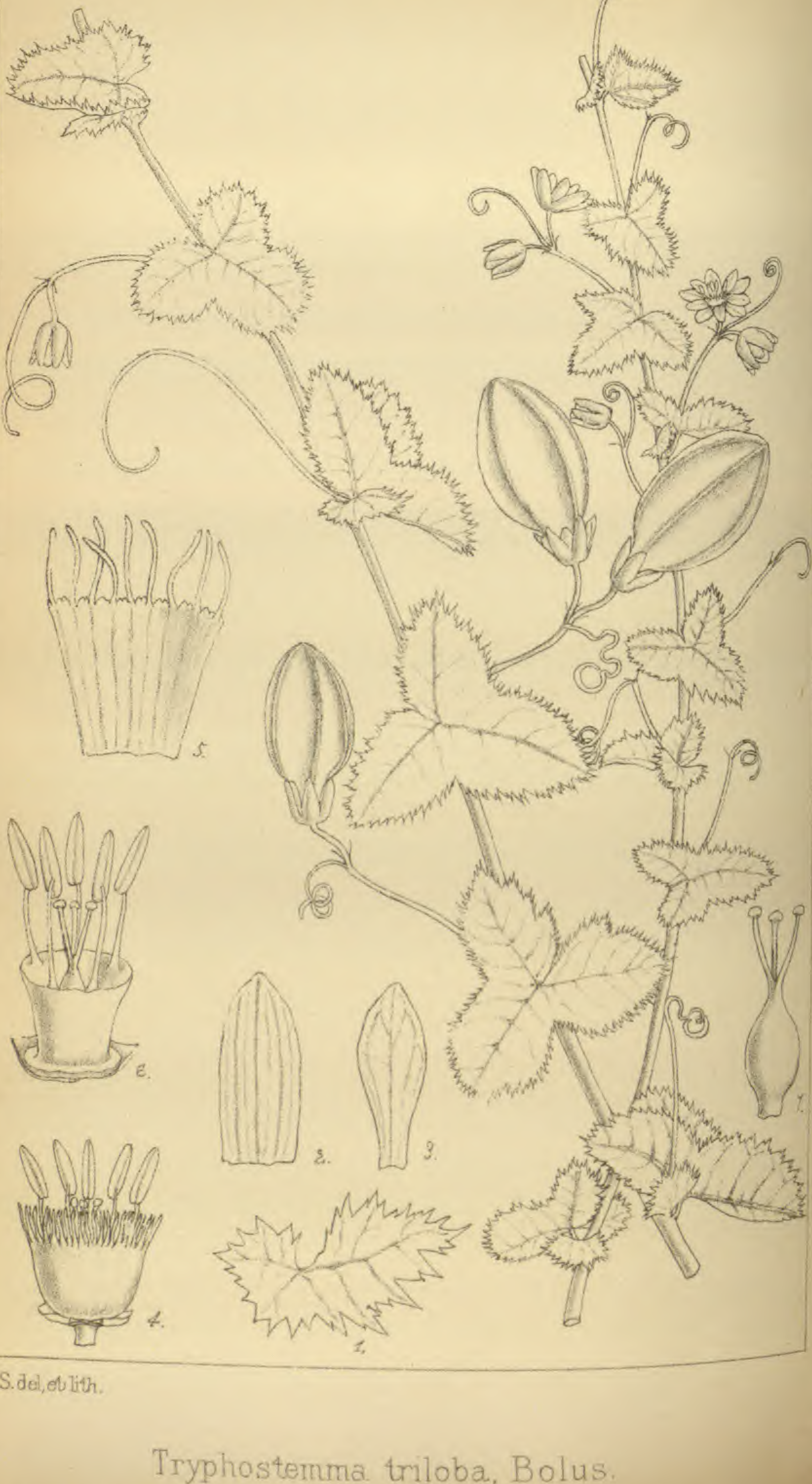
Leguminosæ (Genus anomalum).

I. edulis, *Forst., Benth. in Journ. Linn. Soc.* (Bot.) vi. 149.

This plate is simply intended to put on record the structure of the fruit, which has not hitherto, so far as I am aware, been correctly represented. Our figures are from excellent specimens in fluid brought home by Mr. Lister from Christmas Island on the occasion of his recent visit in the surveying ship 'Egeria.' An elaborate description of the fruit is given by Gaertner (*fil.*) in 'Carpologiæ Suppl.' 114, *cum tabb.*, but, I take it, his figure is from a fruit in which germination had commenced, at least to the extent of the absorption of the inner stratum of the pericarp, and corresponding enlargement of the cotyledons, which are shown with a remarkable reticulate corrugation of the outer surface.

In our specimens the roundish compressed fruits are from $2\frac{2}{3}$ in. to $3\frac{1}{4}$ in. long and broad; the diameters nearly equal, varying to nearly $1\frac{1}{2}$ in. in thickness. The surface is quite smooth, the style-scar slightly oblique, a narrow ridge on one edge of the fruit terminating immediately under it. Our specimens in spirits are dark reddish-brown in colour. The pericarp is very thick in transverse section, about $\frac{2}{3}$ in. on the side toward the external ridge. The outer and thicker stratum of this pericarp is firm, though easily cut with the knife, and exhibits in section a copious, more or less radiating, somewhat fibrous vascularity; the inner narrower stratum is fleshy, and nearly uniform in section. The seed occupies a roundish, shallow, slightly unilateral cavity; it is broadly reniform, much compressed, laterally affixed, nearly quite smooth, 7–8 lines by 5–6 lines long and broad; testa thin and papery, closely investing the embryo. The material available does not enable me to say anything satisfactory as to the radicle and plumule.—D. Oliver.

Fig. 1. Fruit. 2. Same in longitudinal section. 3. Seed in section. 4. Embryo. 5. Same, edgewise. 3 and 5 *slightly enlarged.*



M. S. del, et lith.

Tryphostemma triloba, Bolus.

Plate 1838.

TRYPHOSTEMMA TRILOBA, *Bolus.*

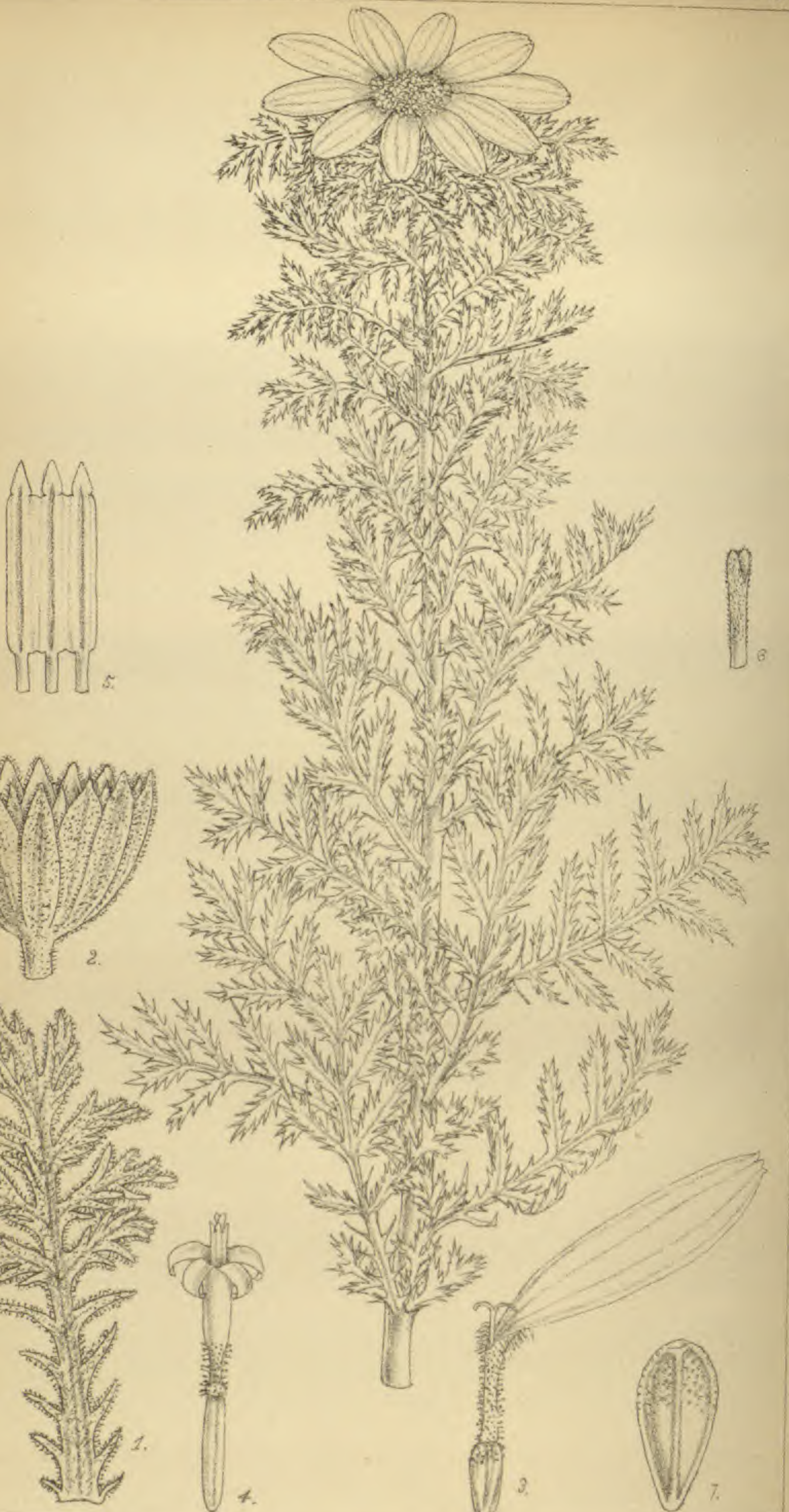
Passifloraceæ. Tribe Passifloreæ.

T. triloba, *H. Bolus* (*sp. nov.*); herba scandens, glabra cirrifera: caules plures verisimiliter annui e radice perenni, basin versus ramosi, distanter foliosi; folia brevissime petiolata sagittato-triloba 1–2 centim. longa, lobis ovatis acutis argute serrato-denticulatis, lateralibus interdum 1–2 lobulatis, stipulis semi-sagittatis acuminatis serrulatis, 0·5–1 centim. longis; pedunculi cirriferi folia excedentes recti 1- vel rarius 2-flori, 2–3 cm. longi, pedicelli gracillimi bracteati 3–5 millim. longi; flores expansi 1–1·2 cm. lati, sepala oblonga obtusa, petalis spathulato-oblongis æquilonga; corona exterior tubulosa sursum fimbriata, interior annulata brevissima; filamenta summo tubo hyalino hypogyno intus adnata, antheris coronam exteriorem superantibus; styli 3 divergentes; ovarium 6-ovulatum; capsula 2-sperma chartacea, 2–3 cm. longa.

Hab. Inter frnticulos prope Puzeen's Kraal, in provinciâ Delagoa, Africa Austr.-Orientali, alt. circ. 60 metr., fl. Aug. anno 1886, legi, No. 7606.—*H. Bolus.*

This is very similar in floral structure to *T. Hanningtoniana*, M. T. Mast., figured on tab. 1484 of this work. But, besides the difference in the leaves, the flowers are larger and the tube of the outer corona longer in proportion to the fimbriæ. The very distinct though short ring which surrounds the staminal tube (and which is also present in *T. Hanningtoniana*) is here regarded as the inner corona.—H. Bolus.

Fig. 1. Stipule. 2. Sepal. 3. Petal and exserted anthers. 5. Part of outer corona, laid open. 6. Stamens, showing insertion on inner face of hypogynous tube. 7. Pistil. *Enlarged.*



M.S. del. et lith.

Osteospermum tanacetifolium, Macowan.

Plate 1839.

OSTEOSPERMUM TANACETIFOLIUM, *Macowan.*

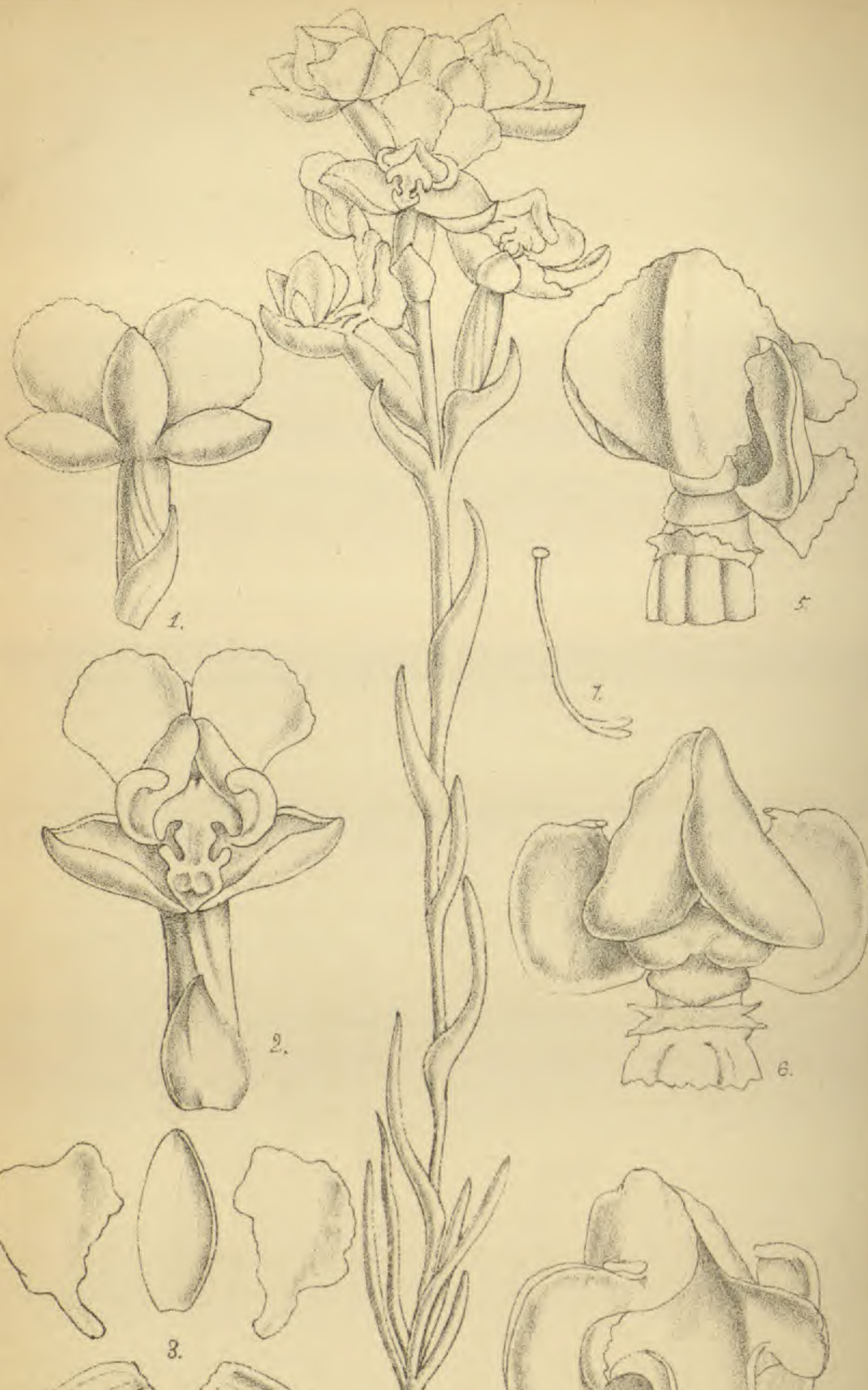
Compositæ. Tribe Calendulaceæ.

O. tanacetifolium, *Macowan in sched. No.* 1382 *Herb. Aust. Africa*; caule fruticoso basi nudo simplicique superne divaricato, foliis scabro-glandulosis sessilibus ad apices ramorum confertissimis recurvo-patentibus interrupte bi-pinnatipartitis, lobis argute incisis rachi hinc inde pectinata, involucri squamis 2-seriatis oblongis acutiusculis subconformibus margine membranaceis, radiis (10–)12, acheniis clavatis ecostatis læviusculis (*Macowan*, l. c.).

Hab. Kagaberg and Boschberg, Prov. Somerset, Cape Colony, *P. Macowan.*

I find the ripe achenes distinctly, though not prominently, longitudinally 4–5-costate, and more or less minutely tuberculate towards the apex: they are about 3 lines in length. The species is a very marked one in the genus.—D. Oliver.

Fig. 1. Leaf. 2. Involucre. 3. Ray-floret. 4. Disk-floret. 5. Anthers. 6. Stigma. 7. Achene. *Enlarged.*



M. S. del, et lith.

Ceratandra Harveyana, Lindl.

Plate 1840.

CERATANDRA HARVEYANA, *Lindl.*

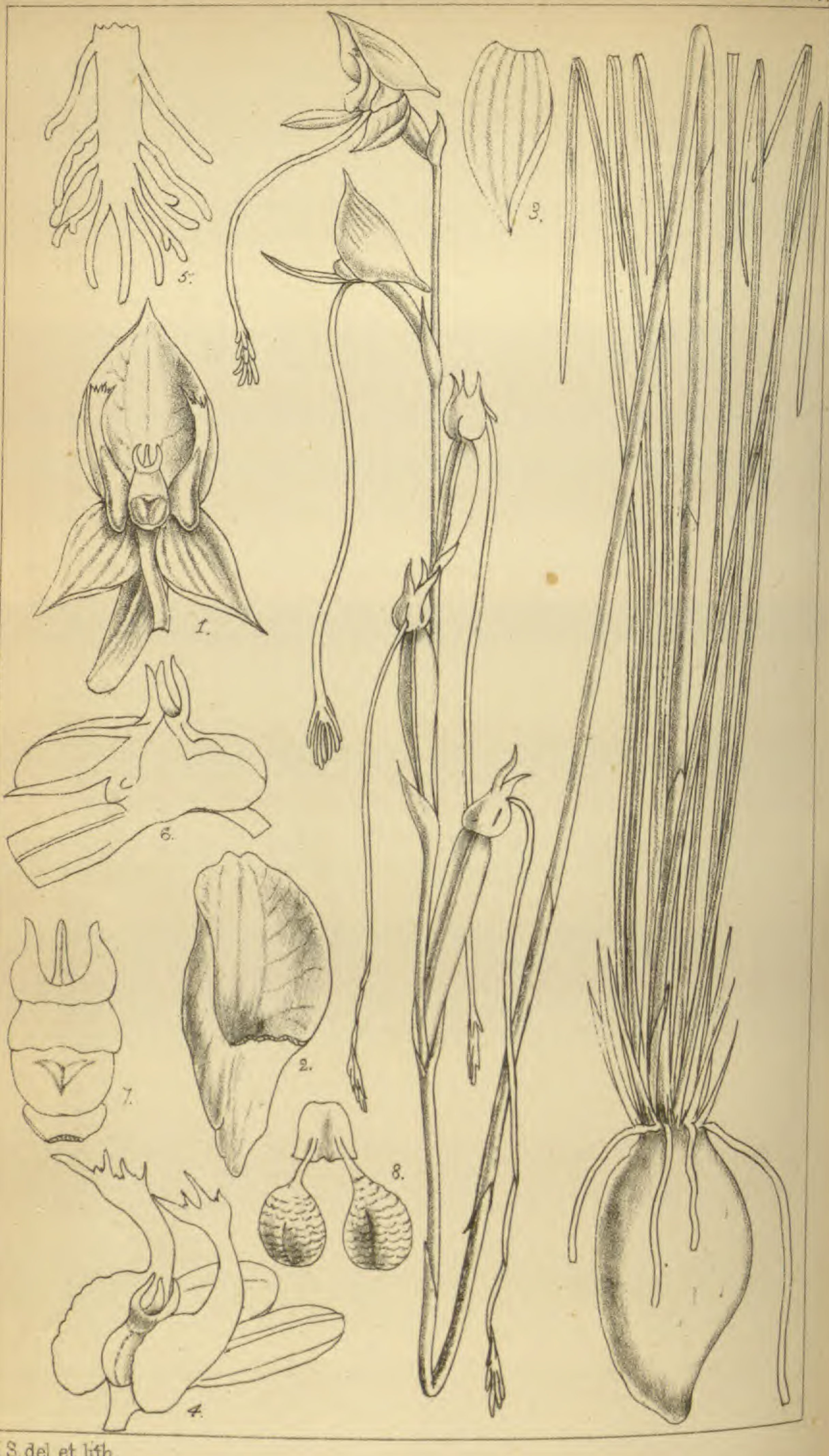
Orchidaceæ. Tribe Ophrydeæ.

C. Harveyana, *Lindley, Gen. & Sp. Orch.* (1838), p. 365, *non Sonder*; spithamæa glabra; caulis erectus flexuosus distanter foliosus; folia radicalia linearia uncialia, in bracteas latiores basi vaginantes apice ustulatas abeuntia; racemi laxe 3–5 flori; sepalum impar posticum, petalis cohaerentibus oblique obovatis unguiculatis irregulariter lobulatis crenulatisque; sepala lateralia elliptica concava patentia; labelli lamina deltoideo-hastata acuta tuberculata, appendice lamina multo majore basi contracta subquadrata, sursum in brachia duo dilatata, apice in plicas duas latas stigma obtegentes reflexa; rostelli brachia lata auriculæformia; stigma posticum bilobum, lobis pulvinatis.

Hab. In planitie inferiori montis Tabularis prope Cape Town, alt. circ. 740 metr., flor. Dec.–Jan., rara, *Bolus* 4548 (*in Herb. Kew*).

The petals and lip are a sulphur-yellow, the appendage a deeper golden yellow, sepals greenish yellow above, brownish below. A very curious species, allied to *C. bicolor*, Sond., but readily distingnished from that by the absence of the long horn-like appendages to the lip. The two form a very distinct section of the genus in which the arms of the rostellum are not elongated (as Lindley originally described the genus), but are laterally dilated; the flowers also differ in appearance from their congeners, resembling those of *Pterygodium*, from which, if the back sepal and cohering petals were hooded and the rostellum somewhat less developed, they would be scarcely distinguishable. Harvey inclined to regard the present species as the type of a distinct genus, for which he proposed the name *Calota*. Lindley, however (and, I think, rightly), considered it as too near to *Ceratandra*. It is, indeed, intermediate between the latter genus and *Pterygodium*. —H. Bolus.

Fig. 1. Flower, posterior view × 2. 2. Same, anterior view × 2. 3. Sepals and petals. 4. Column and lip, viewed obliquely. 5. Same, viewed laterally. 6. Same, viewed posteriorly. 7. One of the pollinia. *All the latter variously enlarged.*



M S. del et lith.

Disa Charpentieriana, Reichb. f.

Plate 1841.

DISA CHARPENTIERIANA, *Reich. f.*

Orchidaceæ. Tribe Ophrydeæ.

D. Charpentieriana, *Reichenbach f. in Linnæa*, vol. xx. (1847), p. 688; *Icon. Flor. Germ.* vol. xiii. (1851), t. 354, ff. 21–23 (§ Herschelia); erecta, glabra, tubere obovato vel difformi magno; folia radicalia plura linearia graminoidea acuta scapo multo breviora; scapus substrictus, vaginis acutis adpressis membranaceis 6–8 distanter vestitus; racemus laxe 3–5-florus, bracteis lanceolatis acuminatis vaginantibus; flores cum ovariis internodis æquantes; sepala lateralia ovata acuminata concava patento-deflexa; sepalum impar galeatum acuminatum emarginatum adscendens, calcare conico acuto; petala biloba, lobo inferiore oblongo dilatato columnæ adnato, superiore falcato-adscendente apice irregulariter dentato; labellum longissime unguiculatum apice dilatatum laciniatum; rostellum trilobum; glandula (an semper?) unica. *D. macroglottis, Sonder in Linnæa*, vol. xx. (1847), p. 219.

Hab. In collibus prope Villiersdorp, alt. circ. 400 metr., flor. Nov. anno 1879, legi; No. 5278; in monte Winterhoek prope Tulbagh, alt. 900 metr., flor. Jan., *A. Bodkin*; *Zeyher*, 3918.

Scapus 7–8 centim. longus. *Galea* (cum calcare 5 mm. longo) 1·8 cm. longa. *Labellum* 5–8 cm. longum.

A very curious and distinct species of a group of which we are yet far from knowing the limits of variability. The long lip is very remarkable, and as it sways about in the wind suggests a possible means of attraction for insects. The galea and sepals are a dull leaden purple with darker markings, the petals purple in front, with white below and green above, the lip greenish.—H. Bolus.

Fig. 1. Flower, front view × 2. 2. Odd sepal × 2. 3. Side sepal × 2. 4. Column with petals × 3. 5. Apex of the lip. 6. Column, side view. 7. Ditto, front view. 8. Pollinia, with gland. *All the latter variously enlarged.*

Pachyrrhizus angulatus, Rich.

Plate 1842.

PACHYRRHIZUS ANGULATUS, *Rich.*

Leguminosæ. Tribe Phaseoleæ.

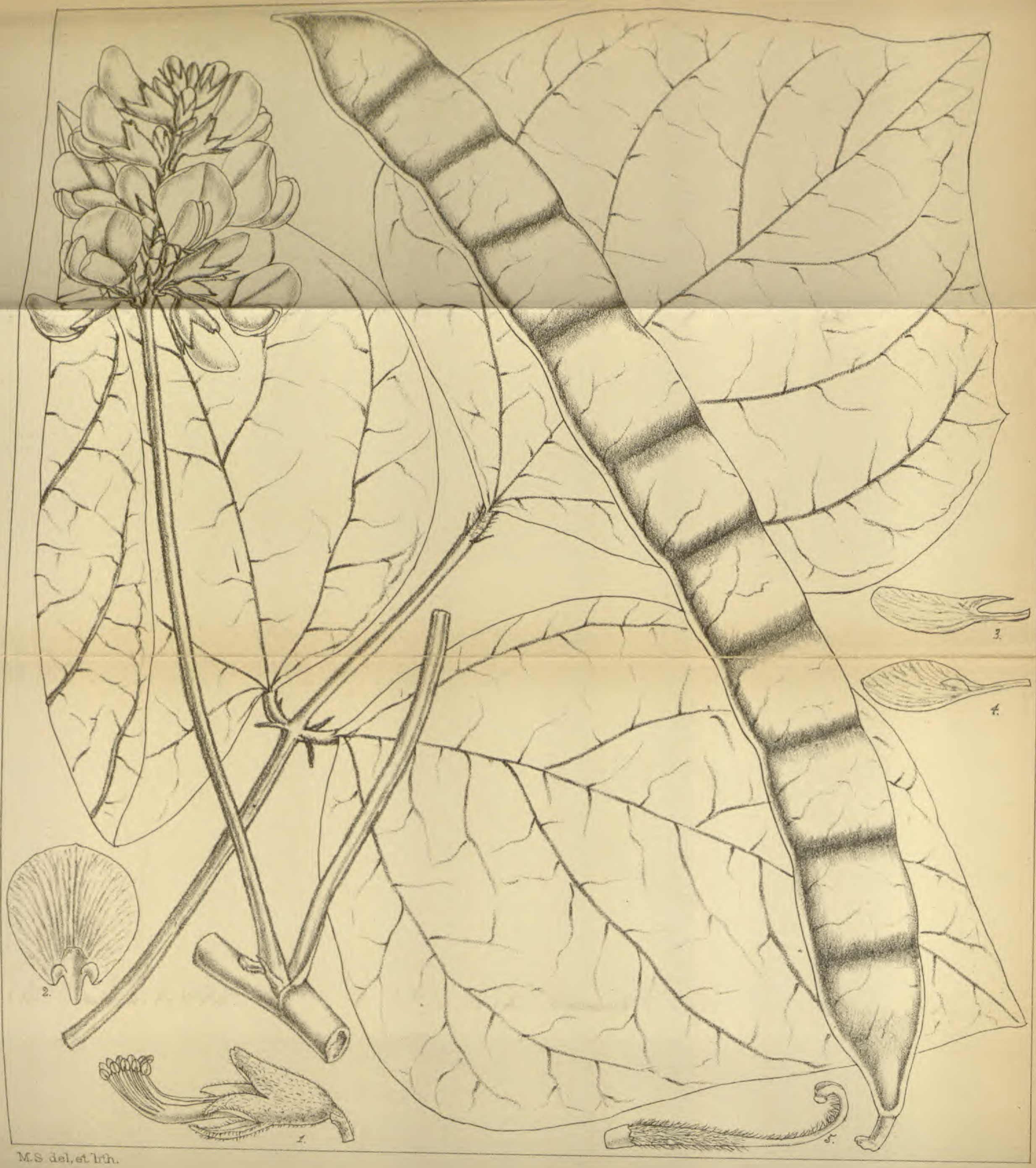
P. angulatus, *Rich.*; *DC. Prod.* ii. 402; foliolis sæpius angulato-dentatis, legumine 3–5 poll. longo. *Hook. fil. Flora Brit. India, cum Syn.* ii. 207.

Hab. Widely cultivated in the tropics of both hemispheres, 'probably of Central American origin,' Bentham, in Martius, *Fl. Bras.* (*Papilionaceæ*), 199 *cum tab.* 53.

Rhizoma tuberosum. *Caules* volubiles frutescentes, hirti v. glabrati. *Folia* pinnatim 3-foliolata sæpe longiuscule petiolata; stipulæ deltoideo- v. ovato-lanceolatæ, breves; foliola petiolulata ampla, terminale basi late cuneatum, lateralia valde obliqua, hirta v. glabrata; stipellæ subulatæ. *Racemi* elongati longe pedunculati basi sæpe ramosi, ramis adscendentibus. *Legumen* 6–8 lin. latum, inter semina extus transverse depressum.

As there is no readily accessible figure of this common species, this plate is given for the sake of comparison with the following (Tab. 1843).—D. Oliver.

Fig. 1. Calyx and stamens. 2. Vexillum. 3. Wing-, and 4. Keel-petal. 5. Pistil. 6. Seed. *Enlarged.*



M.S. del. et lith.

Pachyrrhizus tuberosus, Spr.

Plate 1843.

PACHYRRHIZUS TUBEROSUS, *Spreng.*

Leguminosæ. Tribe Phaseoleæ.

P. tuberosus, *Spreng. Syst. Veg.* iv. pars 2 (*Cur. post.*) 281; foliolis subintegris v. obscure sinuatis (in spp. juven. nonnunquam late lobatis), legumine 8–12 poll. longo.—Dolichos tuberosus, *Lam. Dict.* ii. 296.

Hab. We have only cultivated specimens from Tarapoto (*Spruce*, 4936), and, recently, from Dr. Trimen, F.R.S., from the Perideniya Gardens. Cultivated also in the West Indies and Venezuela.

'*Herba* volubilis, 10–20-pedalis pro tuberis maximis edulis culta' (*Spruce MSS.*). *Racemi* in spp. nostr. quasi simplices, ramulis inferioribus brevissimis plurifloris floribus congestis. *Legumen* 9–10 lin. latum, inter semina profunde depressum.

A full account of this plant, the 'Yam Bean,' is given in the 'Kew Bulletin,' No. 25 (January 1889), p. 17, where attention is called to Dr. Trimen's discovery that the young pods are an admirable vegetable, superior to ordinary French beans in 'the absence of any fibrous string about the sutures of the pod.' The seeds are poisonous (*Macfadyen, Spruce*).

It may be a question how far this plant is specifically distinct from *P. angulatus*, Rich. Mr. Bentham regarded Spruce's specimens from Peru as belonging to this species. I think it may well be a variety originated under cultivation, but so marked as to require a distinct name for cultural purposes, and for the present the specific name given by Lamarck may suitably be adopted.—D. Oliver.

Fig. 1. Calyx and stamens. 2. Vexillum. 3. Wing-, and 4. Keel-petal. 5. Pistil. *Enlarged.*

M.S. del et lith.

Chisocheton princeps, Hemsl.

Plate 1844.

CHISOCHETON PRINCEPS, *Hemsl.*

MELIACEÆ. Tribe TRICHILIEÆ.

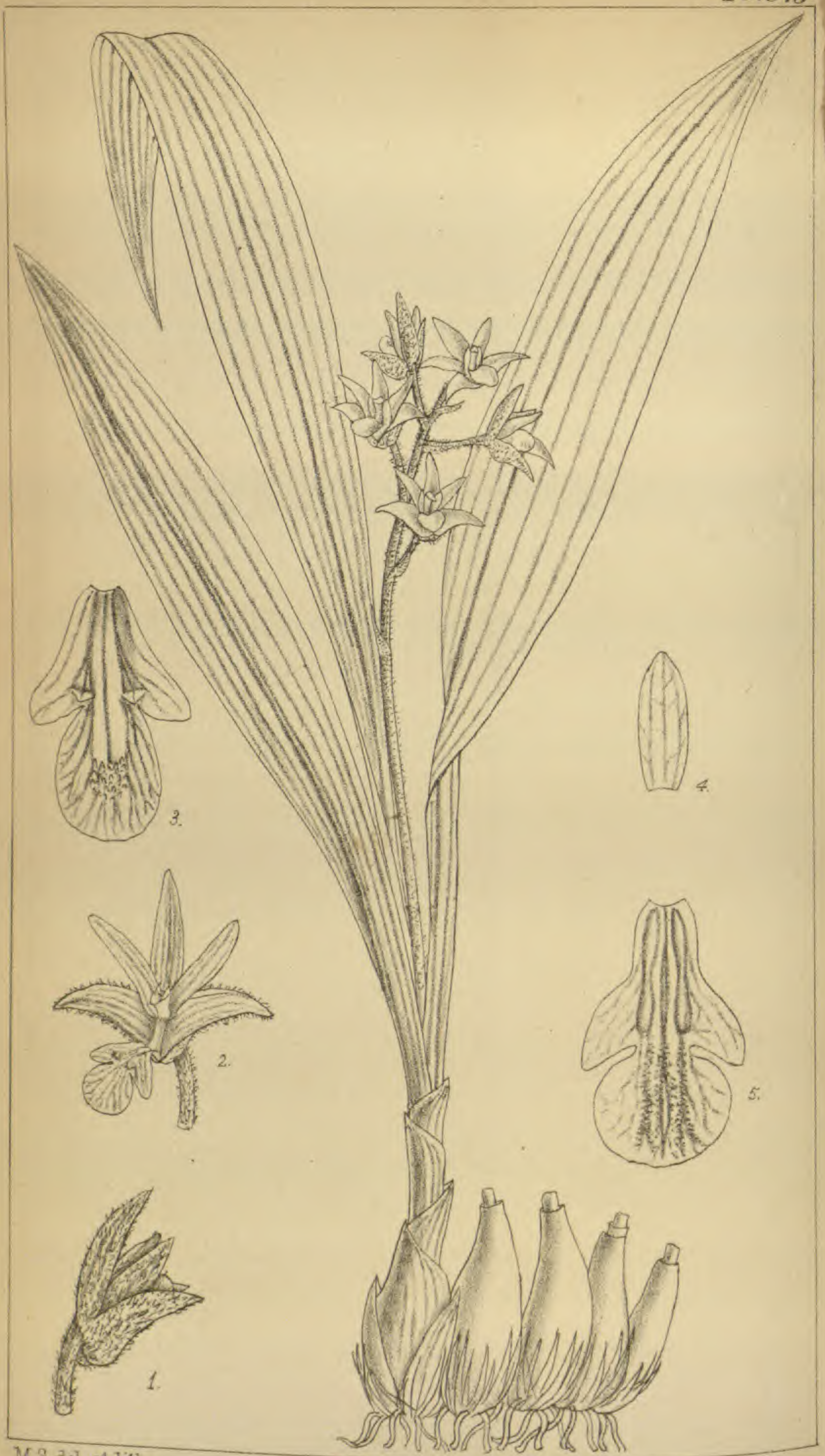
C. princeps, *Hemsl.* (*sp. nov.*); arbor ut videtur palmiformis trunco simplice, foliis pinnatis amplissimis, rhachi crassa tereti pubescenti, foliolis oppositis brevissime petiolulatis oblongis vix acutis basi rotundatis undulatis supra glabrescentibus rugulosis costa pubescenti subtus pubescentibus insigniter elevato-venosis, floribus magnis sericeo-tomentosis secus rhachin longissimam pendulam glomerato-fasciculatis brevissime pedicellatis, calyce cupulari, corollæ lobis plus minusve induplicato-valvatis marginibus lævibus, tubo stamineo 10-dentato intus infra medium villoso, dentibus acutis antheris subinclusis alternantibus, ovario glabro 5-loculare, loculis uniovulatis, stylo hispidulo tubum stamineum superante, fructu pomiformi siccitate rugoso plus minusve 5-lobato, seminibus castaneis.

HAB. Penang, at the Waterfall, *Mr. C. Curtis*, 1519.

Arbor 40-pedalis, foliis 9–10-pedalibus (Curtis). *Foliola* saltem usque ad 18 poll. longa (inferiora non visa) et 5 poll. lata; petioluli brevissimi valde incrassati. *Inflorescentia* 3 ped. longa (forsan ultra). *Flores* 15–18 lineas longi. *Fructus* siccus $2\frac{1}{2}$ poll. diametro. *Semina* $1\frac{3}{4}$ poll. longa.

This tree must be a very striking object, its enormous pinnate leaves surpassing those of a similar member of the same Order recently figured in this work (pl. 1708) under the name of *Megaphyllæa*.—W. B. HEMSLEY.

Fig. 1. A flower from which two lobes of the corolla have been removed to show the staminal tube and upper part of the style; the infolded margins of the corolla-lobes are thin and naked. 2. Staminal tube, laid open. 3. Pistil. 4. Vertical section of the ovary and cupular disk. *All enlarged.* 5. A fruit from which a portion of the pericarp has been removed, revealing the seeds. 6. Cross section of the dried fruit. *Natural size.*



Eria alba, Lindl.

Plate 1845.

ERIA ALBA, *Lindl.*

Orchideæ. Tribe Erieæ.

E. alba, *Lindl. Gen. et Sp. Orchid.* 67; pseudobulbis seriatis confertis ovoideis non caulescentibus, foliis 3–5 anguste lanceolatis striatis rigidiusculis nervosis, scapo foliis breviore erecto ovarioque pubescente, sepalis ovato-lanceolatis 3–5-nerviis glabris v. pubescentibus, mento rotundato, petalis lineari oblongis obtusis 3-nerviis, labello ambitu obovato-oblongo late unguiculato albo purpureo tincto, lobis lateralibus oblongis obtusis, intermedio orbiculari v. obovato-oblongo, disco sæpissime crasse 2-carinato, columna parva pede non excavato.

Hab. Subtropical Himalaya, from Kumaon, alt. 3,000–6,000 ft., *Royle, Strachey and Winterbottom* (*E. excavata*), &c., to Sikkim, alt. 6,000–7,000 ft.

This species belongs to the difficult group with *E. graminifolia* (pl. 1847), *E. excavata* (pl. 1846), and *E. confusa* (pl. 1850), species that are abundantly distinct in a living state, but in the Herbarium difficult to distinguish without careful analysis. Speaking roughly, *E. graminifolia* may be recognised by its caulescent habit, short bracts, and the recurved side lobes of the lip; *E. excavata* by the sessile lip and excavated foot of the column; *E. confusa* by the caulescent pseudobulbs; and *E. alba* by none of these characters applying to it. *E. acervata* (pl. 1849), which is confounded with these in herbaria, differs greatly in the flaccid leaves, glabrous inflorescence, pedicelled flowers, and long bracts. The thickenings on the lip are as variable in this as in its allies.—J. D. Hooker.

Fig. 1. Flower, seen laterally, and 2. Same in front. 3. and 5. Lips. 4. Dorsal sepal. *All enlarged.*

M.S. del et lith.

Eria excavata Lindl.

Plate 1846.

ERIA EXCAVATA, *Lindl.*

Orchideæ. Tribe Erieæ.

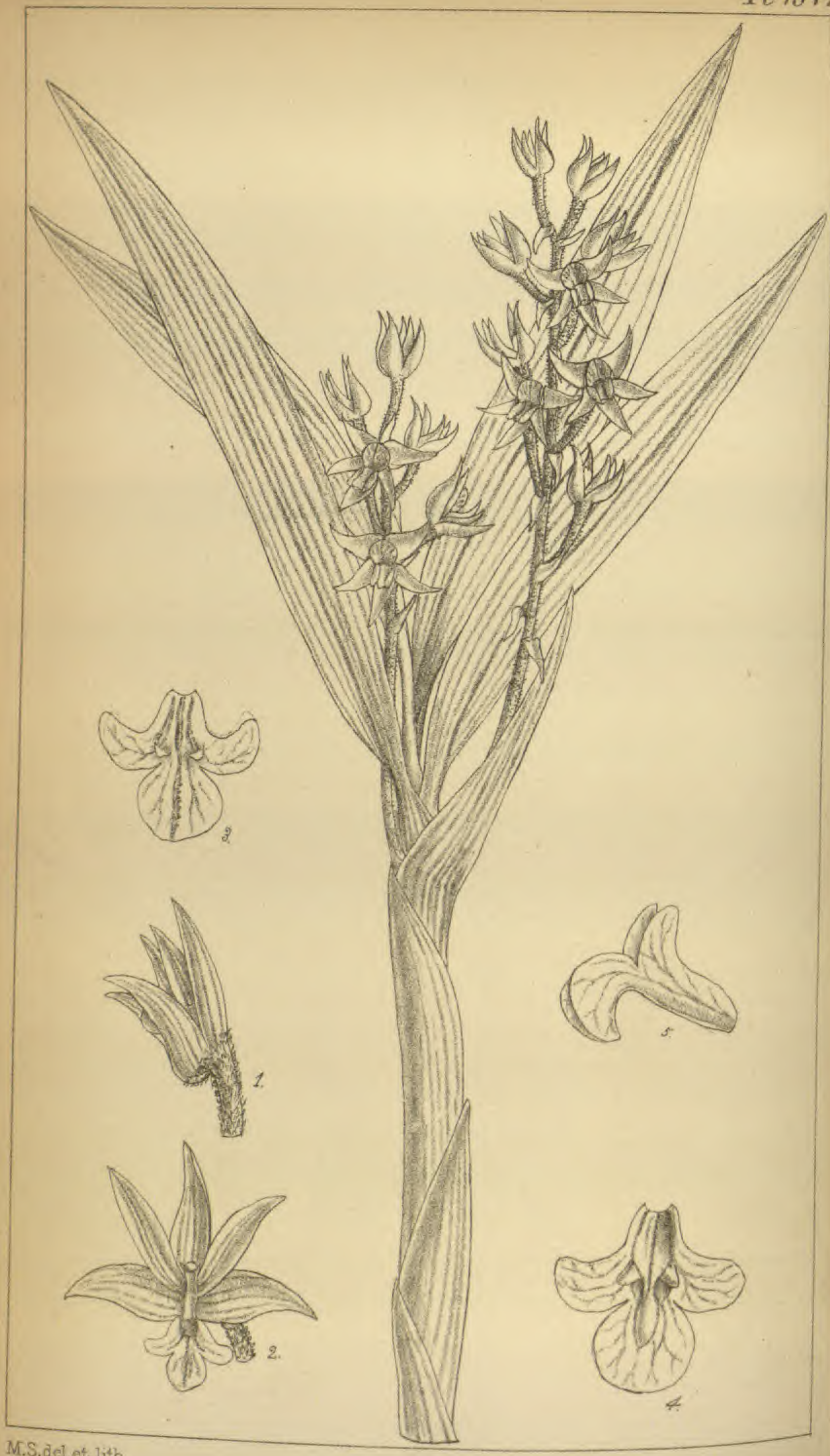
E. excavata, *Lindl. in Wall. Cat.* 1974 *in part*; pseudobulbis seriatis confertis subcylindraceis non caulescentibus, foliis 4–6 linearibus v. elliptico-lanceolatis nervosis, spicis foliis brevioribus paucifloris pubescentibus, bracteis lanceolatis ovaria subæquantibus, sepalis ovato-lanceolatis subacutis, mento 0, petalis lineari-oblongis obtusis 5-nerviis, labello brevi sessili lobis lateralibus ovatis obtusis patentibus, intermedio polymorpho subrotundato late obovato v. subreniformi, callis disci variis, columna brevi lata pede profunde excavata. E. sphærochila et E. flava *var.* rubida, *Lindl. in Journ. Linn. Soc.* iii. 54, 49. Octomeria excavata, *Wall. MSS.*

Hab. Nepal, *Wallich*; Sikkim and the Khasia Hills, *J. D. Hooker.*

Pseudobulbi 1–2-pollicares, ovoidei v. subcylindracei. *Folia* 5–9-pollicaria, rigidula, nervosa. *Flores* albi, ½-poll. lati, labelli basi saccati lutei lobis lateralibus roseo-tinctis, nervis purpureis.

There has been confusion about this plant from the first. The name was proposed by Wallich, for the plant here figured, but under the same number he included in his type Herbarium, and distributed, a very different species (*E. confusa* mihi, pl. 1850); and of this latter alone flowering specimens were given, under the name of *excavata*, to Dr. Lindley, who described its stem as that of *excavata*. *E. excavata* differs from its near allies in this character of the excavated foot of the column, and in that of the lip being entirely sessile, the base not being contracted, and the side lobes being hence basal. As shown by the lips here figured the form and position of the calli on the disk vary exceedingly.—J. D. Hooker.

Fig. 1. Flower. 2, 3, and 4. Lips. *All enlarged.*



M.S. del. et lith.

Eria graminifolia, Lindl.

Plate 1847.

ERIA GRAMINIFOLIA, *Lindl.*

Orchideæ. Tribe Eriæ.

E. graminifolia, *Lindl. in Journ. Linn. Soc.* iii. 54; pseuodbulbis demum in caules elongatos cylindraceos nudos v. vaginatos desinentibus, foliis 4–6 lineari-lanceolatis rigidiusculis nervosis, spicis foliis brevioribus erectis laxifloris pubescentibus, bracteis parvis late ovatis ovariis tomentosis multo brevioribus, sepalis lateralibus ovato-lanceolatis 3–5-nerviis, mento obtuso, petalis linearibus acutis 3-nerviis, labello brevi unguiculato lobis lateralibus oblongis recurvis, intermedio orbiculari, disci callis 3 (v. 0), lateralibus sæpe auriculæformibus intermedio oblongo.

Hab. Sikkim Himalaya, alt. 5,000–6,000 ft., *Griffiths' Collector*, *J. D. H.*

Pseudobulbi v. si mavis *caules* 5–6-pollicares, crassitie pennæ anserinæ v. olorinæ, demum nudi. *Folia* 4–6 poll. longa, striata. *Scapus* cum spica 2–4 poll. longus. *Flores* ½ poll. diam., albi; columna breviuscula, subgracilis, pede non excavata.

As with many of the species of this genus, the calli on the lip are very variable.—J. D. Hooker.

Fig. 1. Side view of flower. 2. Front view of same. 3, 4, and 5. Lip. *All enlarged.*

M.S. del. et lith

Eria elata, Hook. f.

Plate 1848.

ERIA ELATA, *Hook. f.*

Orchideæ. Tribe Erieæ.

E. elata, *Hook. f.* (*sp. nov.*); elata, pseudobulbo elongato crasso foliis paucis terminalibus coriaceis pedalibus oblanceolatis basi plurivaginatis, scapo robusto foliis longiore plurifloro, bracteis magnis lanceolatis, floribus majusculis sessilibus, ovario basique perianthii pubescentibus, sepalis lateralibus falcato-lanceolatis acutis 5–7-nerviis, mento obtuso, petalis lineari-oblongis obtusis falcatis 5-nerviis, labello semi-lunari lobis lateralibus incurvis obtusis intermedio parvo rugoso longioribus, disco 3-carinato, columna gracili elongata, pede pubescente.

Hab. Malay Peninsula, *Father Scortechini.*

A remarkable species, unlike any other, but somewhat resembling *E. carinata* in the robust habit and equitant sheaths of the leaves, which latter are a foot long, coriaceous, acuminate; the orbicular lip is very peculiar, the side lips being directed inwards towards the small midlobe forming a large sinus, and embracing the latter. It comes into the section *Hymeneria*, which is a very heteromorphous one; were it densely tomentose or woolly, it would be referred to section *Dendrolirion*.—J. D. Hooker.

Fig. 1. Flower. 2. Dorsal sepal. 3. Lip. 4. Top of ovary and column. *All enlarged.*

Eria acervata, Lindl.

Plate 1849.

ERIA ACERVATA, *Lindl.*

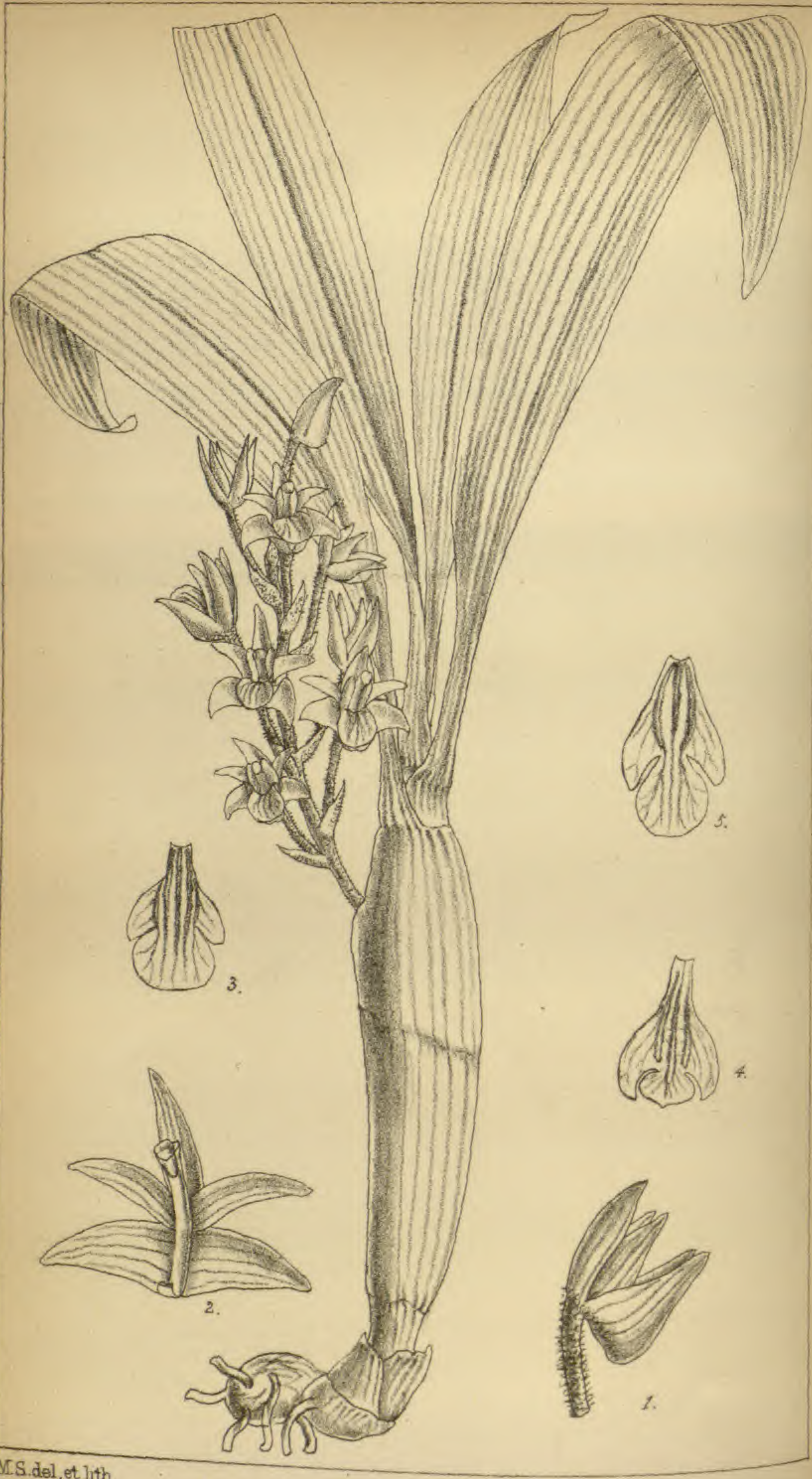
Orchideæ. Tribe Erieæ.

E. acervata, *Lindl. in Journ. Hort. Soc.* vi. (1851), 57, *cum ic. xylog.*, et in *Paxt. Fl. Gard.* i. 170; pseudobulbis confertis crassis, foliis 3–5 oblanceolatis flaccidis, racemis floribusque glabris, bracteis majusculis lanceolatis, sepalis lateralibus ovato-lanceolatis acuminatis falcatis 5–7-nerviis, mento majusculo late conico obtuso, petalis lineari-oblongis lanceolatisve 5-nerviis, labello ambitu obovato v. oblongo, basi angustato, lobis lateralibus oblongis obtusis incurvis, terminali rotundato v. ovato margine sæpissime incrassato, disco carinis 3 in lobum terminalem productis v. abbreviatis instructo, columna gracili pede suo æquilongo. *Reichb. f. in Gard. Chron.* 1878, 106; *Walp. Ann.* vi. 269. Dendrobium seriatum, *Wall. MSS.*

Hab. Sikkim Himalaya (*Ic. in Herb. Hort. Calc.*); Khasia Hills, alt. 4,000–5,000 ft., *J. D. H. and T. T.*; ? Tenasserim, *Parish.*

Pseudobulbs very variable in form, densely crowded, 1–2 inches long, ellipsoid or flask-shaped, often flattened by mutual compression, usually of two nodes, faintly grooved, lengthening into fleshy stems. *Leaves* flaccid, in this respect differing from those of its allies *E. confusa*, *alba* and *graminifolia*, pale green. *Racemes* sometimes several from the same pseudobulb; flowers white or yellowish, membranous; pedicels slender.—The Tenasserim plant referred to this by Reichenbach (*Trans. Linn. Soc.* xxx. 137) has much broader, shorter, and rigid leaves, but it may be a form of *acervata*.—J. D. Hooker.

Fig. 1. Side view of flower. 2. Front view of the same. 3, 4, and 5. Lips. *All enlarged.*



Eria confusa, Hook. f.

Plate 1850.

ERIA CONFUSA, *Hook. f.*

Orchideæ. Tribe Erieæ.

E. confusa, *Hook. f.* (*sp. nov.*); pseudobulbis in caules crassos elevatos v. cylindraceos elongatis, foliis 2–8 lanceolatis rigidiusculis nervosis, racemo laterali pubescente, bracteis majusculis, sepalis oblongo- v. ovato-lanceolatis obtusis 5-nerviis, mento late conico obtuso, petalis ovato- v. lineari-lanceolatis obtusis 3–5-nerviis, labello ambitu obovato late unguiculato, lobis lateralibus ovato-oblongis falcatis, terminali rotundato obovato v. transverso interdum parvo et lateralibus incurvis breviore, disco sæpissime 3-carinato, columna gracili. E. excavata, *in part, Lindl. in Wall. Cat.* 1974, *et in Gen. et Sp. Orchid.* 67.

Hab. Nepal, *Wallich*; Sikkim, alt. 4,000–6,000 ft., *J. D. H.* (*distributed* as E. alba).

The pseudobulbs lengthening into 2–4-nodal stems, 3 to 10 inches long, and as thick as the little finger, and the lateral scape, distinguish this at first sight from *E. excavata*, with which it was distributed by Wallich, and confounded by Lindley. It further differs from that plant in the larger bracts, pedicelled flowers, lip and column (as pointed out under pl. 1846). As in its allies, it varies greatly in the form of the lobes of the lip, and of the calli or ridges on the disk of that organ. No descriptions convey a clear idea to the mind of the form and sculpturing of the lip of orchids, and this organ is so much distorted by compression that in a dried state the characters it affords are often deceptive or misleading.—J. D. Hooker.

Fig. 1. Side view of flower. 2. Front view of the same with the lip removed. 3, 4 and 5. Different forms of lip. *All enlarged.*

VOL. IX.—PART III.] [JUNE.

HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS,

OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

THIRD SERIES.

EDITED BY

SIR JOSEPH DALTON HOOKER, K.C.S.I., C.B., M.D., F.R.S.

D.C.L. OXON., LL.D. CANTAB., DUBLIN, EDIN., AND GLOTT., CORRESP. MEMB. INST. FRANCE;

LATE DIRECTOR OF THE ROYAL BOTANICAL GARDENS, KEW.

VOL. IX.,

OR VOL. XIX. OF THE ENTIRE WORK.

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1889.

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Price Four Shillings.

ACTINOTINUS SINENSIS, published in the last volume of 'Icones Plantarum' (vol. viii. N.S., pl. 1740), proves to be based upon a trick played upon us by one of Dr. Henry's Chinese collectors. It is made up of the inflorescence of a *Viburnum* inserted artfully into the terminal bud of *Æsculus chinensis*.—D. OLIVER, June 1889.

1.

2.

3.

4.

5.

6.

M.S. del. et lith.

Aechmea (§ Androlepis) Skinneri, Baker

Plate 1851.

ÆCHMEA (ANDROLEPIS) SKINNERI, *Baker.*

Bromeliaceæ. Tribe Bromelieæ.

Æ. (Androlepis) Skinneri, *Baker, Handb. Bromel.* 49, *inedit.*; acaulis, foliis e basi ovato lanceolatis facie viridibus dorso tenuiter albo-lepidotis haud fasciatis dentibus marginalibus parvis crebris deltoideis, pedunculo elongato stricto erecto, bracteis superioribus lanceolatis reflexis scariosis rubellis, floribus in paniculam densam angustam rachi stricto haud colorato aggregatis, bracteis floralibus obsoletis, ovario oblongo, calycis segmentis latis brevibus cuspidatis, petalis parvis oblongis luteis, staminibus petalis duplo brevioribus filamentis brevibus applanatis.

Hab. Guatemala, originally collected by Skinner about 1850.

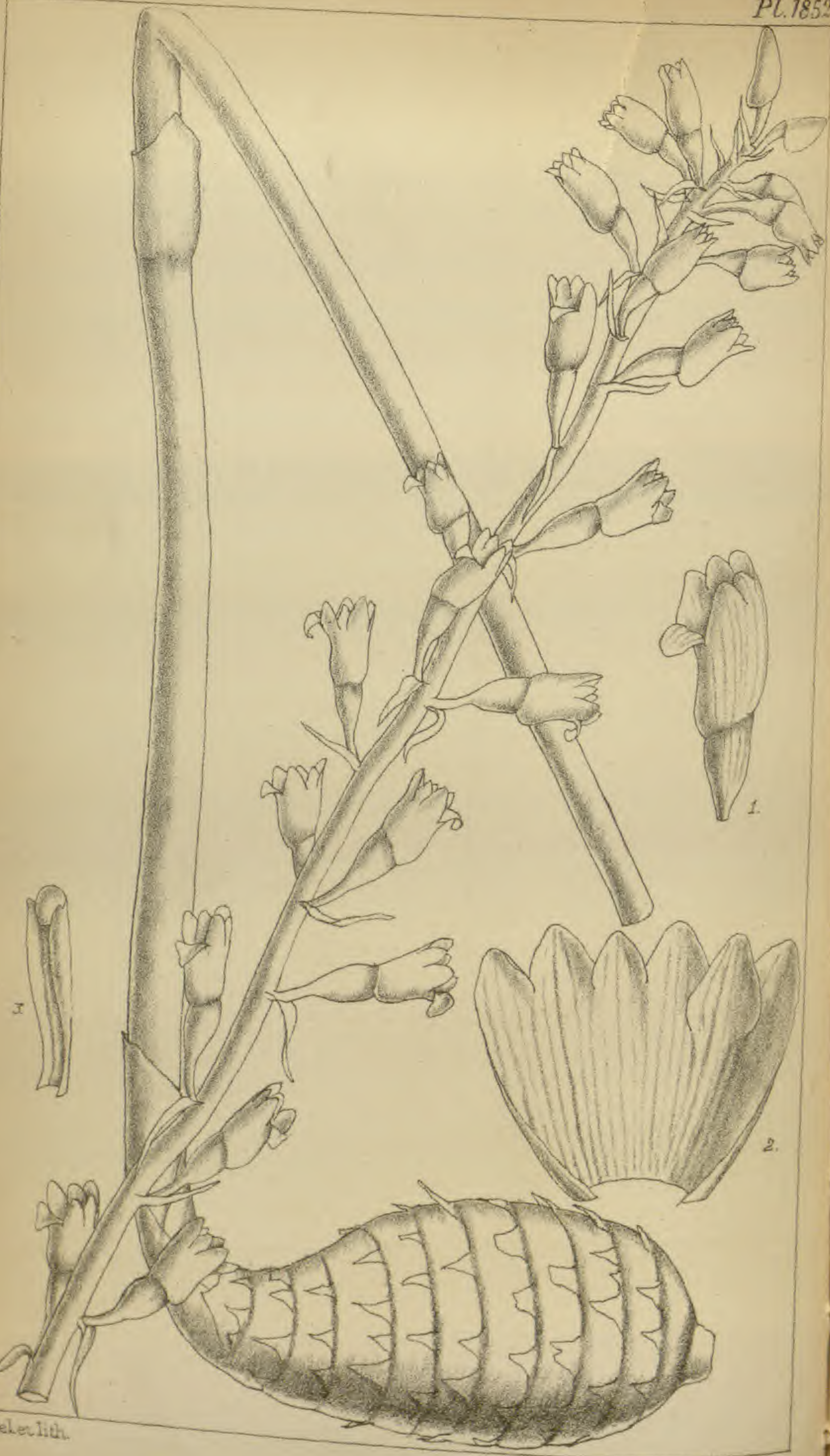
Androlepis Skinneri, *Brong. inedit.*; *E. Morren, Cat. Brom.*, 1871. Billbergia Skinneri, *Hort. Linden.*

Folia 2–2½-pedalia, 2½–3 poll. lata. *Panicula* pedalis. *Ovarium* cum calycis segmentis 6–8 lin. longum.

This Bromeliad was introduced into cultivation by Linden about forty years ago. Brongniart founded upon it his genus *Androlepis*, which, although the name has long been used in gardens, has never been characterised. Our drawing was made from a plant that flowered at Kew last winter.—J. G. Baker.

Fig. 1. Flower complete. 2. Flower with calyx-segments taken away. 3. Vertical section of flower. 4 and 5. Stamens and scales. 6. Apex of style, with twisted stigmas. *All enlarged.*

Pl. 1852



M.S.del.et lith.

Plate 1852.

GASTRODIA OROBANCHOIDES, *Benth.*

Orchideæ. Tribe Neottieæ.

G. orobanchoides, *Benth. in Gen. Plant.* iii. 617. Gamoplexis sesamoides, *Falconer mss. in Royle Ill.* 364; *in Lindl. Gen. et Sp. Orchid.* 384; *in Trans. Linn. Soc.* xx. 293, t. 13.

Hab. Western Himalaya, from Garwhal to Kashmir, in forests, alt. about 7,000 ft. *Falconer, Thomson, Aitchison.*

Bentham, in the 'Genera Plantarum,' has reduced the genus *Gamoplexis* of Falconer, together with *Epiphanes* of Blume, to *Gastrodia*, Brown. Comparing the extreme forms which the aggregate genus thus constituted contains, namely, the *G. sesamoides* of Australia, with *G. orobanchoides* of the Western Himalaya, the generic union of these would seem to be questionable. The justification is contained in the observation following the generic description: 'Perianthium in *G. sesamoide* antice breviter in specie Falconeriana (quæ vix a *G. elata*, Bl., differt) usque ad medium in *G. javanica*, fere ad basin fissum. Labelli forma variabilis est, sed nunquam vidimus petalis simile, ut in icone Falconeriana delineatum.'

With the view of showing the correctness of Mr. Bentham's concluding remark, Dr. King has been so good as to send me specimens of *G. orobanchoides* in spirits. A comparison of these, as delineated on Plate 1852, with the figure given of *Gamoplexis* in the Linnean Transactions, shows that Falconer has depended too much on his native artist, who has represented the sepals, petals, and lip as all sub-equal and similar, forming a regular corolla of three outer and three rather smaller inner horizontally spreading lobes. In his description, however, Falconer carefully defines the limb of the perianth as irregular ('antrorsum subsecunda'), with the lip larger than the petals and inserted lower down in the tube, exactly as shown in our figure.—J. D. Hooker.

Fig. 1. Flower. 2. Perianth laid open. 3. Column. *All enlarged.*

M.S. del. et lith.

Dendrobium nanum, Hook. f.

Plate 1853.

DENDROBIUM NANUM, *Hook. f.*

Orchideæ. Tribe Epidendreæ.

D. (Stachyobium) nanum, *Hook. f.* (sp. nov.); pseudobulbis parvis confertis ovoideis, foliis 2–3 terminalibus breviter vaginatis elliptico-lanceolatis obtusis v. subacutis, scapis 1–2 terminalibus brevibus erectis pluri-floris, bracteis ovario brevioribus, sepalis subæqualibus dorsali oblongo-lanceolato obtuso, lateralibus ovato-lanceolatis falcatis, petalis lineari-oblongis obtusis, mento incurvo obtuso, labello unguiculato suborbiculari serrulato, lobis lateralibus obscuris, terminali rotundato, disco carina lata depressa apice (inter lobos laterales) truncata percurso.

Hab. Malabar; on the Bababoodan Hills, *Law*.

Pseudobulbi $\frac{1}{4}$–$\frac{1}{2}$ poll. longi, juniores vaginati. *Folia* 1–$1\frac{1}{2}$ poll. longa. *Scapus* una cum racemo $1\frac{1}{2}$–3 poll. longus gracilis, 6–8-florus, rachi flexuoso; pedicello una cum ovario $\frac{1}{2}$–$\frac{2}{3}$ poll. longo; bracteis lanceolatis. *Flores* $\frac{1}{2}$ poll. diam.; ut videtur albi; labelli dentibus glandulosis ?; columna brevis.

A member of a small group of the section *Stachyobium*, which is characterised by the short simple stem (here reduced to a pseudobulb) and serrate lip. Its nearest ally is *D. microbulbon* of Malabar.—J. D. Hooker.

Fig. 1. Flower, side view. 2. Ditto, front view. 3. Lip. 4. Column. 5. Anther. 6. Pollen. *All enlarged.*

M.S. del. et lith.

Liparis macrantha, Hook.f.

Plate 1854.

LIPARIS MACRANTHA, *Hook. f.*

Orchideæ. Tribe Liparideæ.

L. (Coriifoliæ) macrantha, *Hook. f. in Fl. Brit. Ind. ined.*; pseudobulbo gracili elongato vaginato foliis 2-nis 8–10-pollicaribus basi articulatis anguste lineari-lanceolatis acutis multinerviis, scapo gracili una cum racemo laxifloro foliis æquilongo nudo, bracteis lanceolatis pedicellum subæquantibus, ovario elongato, sepalis linearibus obtusis rectis 1-nerviis, marginibus revolutis, petalis angustioribus, labello sepalis æquilongo recurvo obovato-spathulato crenulato basi 2-calloso, columna gracili apicem versus anguste alata.

Hab. Upper Assam; in the Naga Hills, *Prain.*

Pseudobulbi 1–2-pollicares, cylindracei; vaginis elongatis 3-pollicaribus apice lanceolatis vestita. *Folia* $\frac{2}{3}$ poll. lata. *Bracteæ* $\frac{1}{3}$ poll. longæ. *Flores* ut videtur flavi; pedicello cum ovario $\frac{2}{3}$ poll. longo. *Sepala* et *petala* fere recta, patentia, $\frac{1}{2}$ poll. longa. *Capsula* immatura $\frac{3}{4}$ poll. longa, clavata.

Closely allied to *L. lancifolia*, Hook. f. (Tab. 1855), but the leaves are 2-nate, hardly petioled, much narrower, the flowers much larger, the sepals 1-nerved, and the wings of the column are not hooked.—J. D. Hooker.

Fig. 1. Sepal; and 2, petal—both spread out. 3. Lip. 4. Column. *All enlarged.*

Liparis lancifolia, Hook. f.

PLATE 1855.

LIPARIS LANCIFOLIA, *Hook. f.*

ORCHIDEÆ. Tribe LIPARIDEÆ.

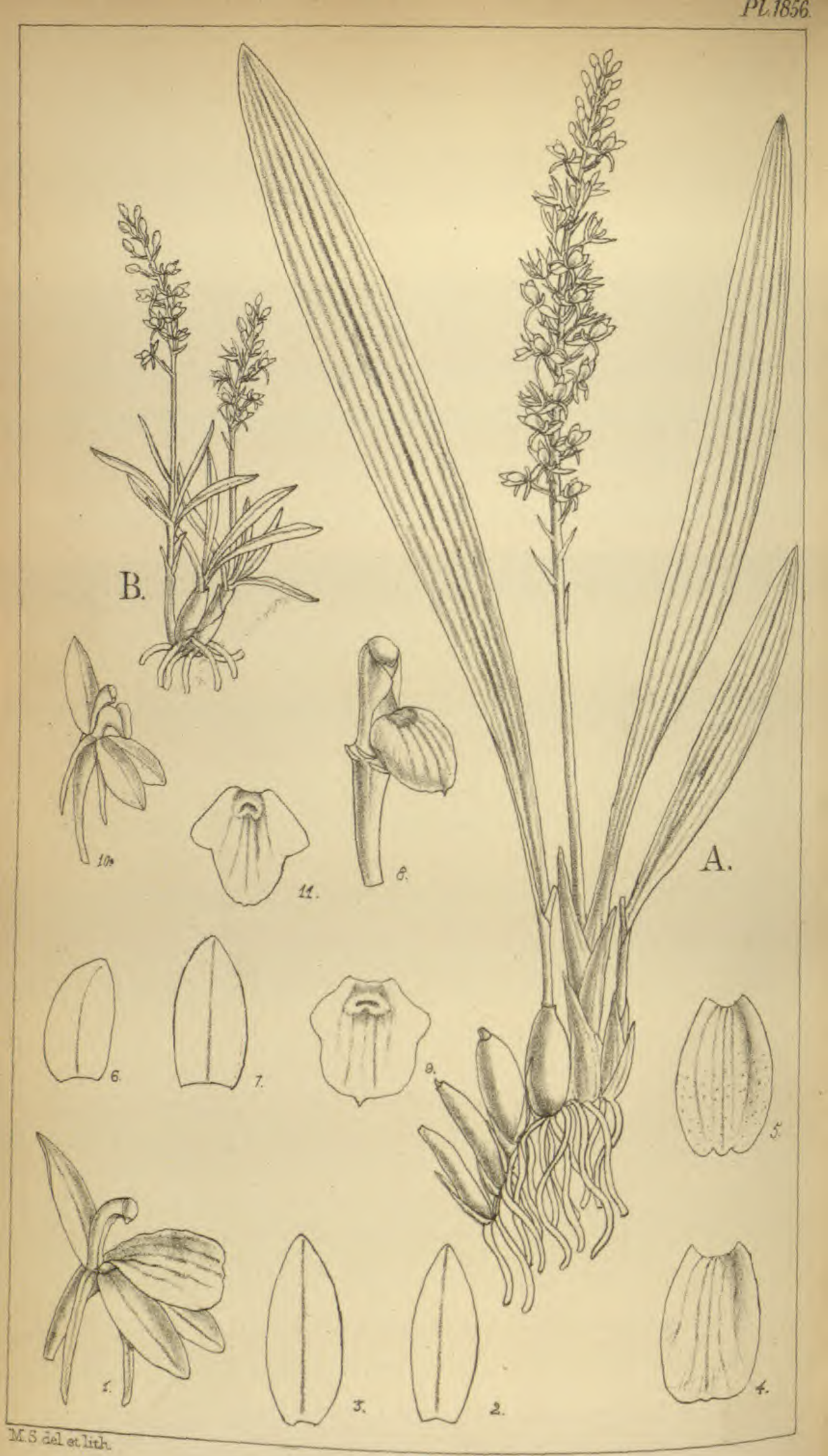
L. (Coriifoliæ) lancifolia, *Hook. f. in Fl. Brit. Ind.* v. 700, *ined.*; pseudobulbo gracili elongato, folio solitario (v. foliis variis) petiolato 4-6-pollicari elongato-lanceolato v. elliptico-lanceolato acuto v. acuminato, petiolo basi articulato, scapo gracili una cum racemo multifloro foliis æquilongo, bracteis ovario brevioribus, sepalis oblongo-lanceolatis obtusis 3-nerviis marginibus revolutis, petalis anguste-linearibus, labello sepalis æquilongo recurvo cuneato-oblongo- v. -obovato integerrimo basi obscure 2-calloso, columnæ alis uncinatis.

HAB. Khasia mountains, common; alt. 4,000–6,000 ft.

Pseudobulbi 1–1½ poll. longi, cylindracei, vaginis elongatis lanceolatis acuminatis vestiti. *Folia* ½–⅔ poll. lata, in petiolum sensim angustata, multinervia. *Bracteæ* ¼ poll. longæ. *Flores* ochraceo-flavi. *Sepala* et *petala* fere recta, patentia, ⅓ poll. longa. *Capsula* ⅓ poll. longa, pedicello decurvo, clavata.

Under *L. macrantha*, Tab. 1854, I have indicated the affinity of this plant to it. It is also very near *L. bootanensis*, Griff., which has a sessile leaf and short pseudobulb.—J. D. HOOKER.

Fig. 1. Flower. 2 and 4. Lips; and 3 and 5, columns—from different specimens. *All enlarged.* 6. Capsules of the natural size.



A. Liparis pusilla, Ridl .
B. —— perpusilla, Hook, f.

Plate 1856.

A.—LIPARIS PUSILLA, *Ridley*.

B.—LIPARIS PERPUSILLA, *Hook. f.*

Orchideæ. Tribe Liparideæ.

A.—**L. (Coriifoliæ) pusilla,** *Ridley in Journ. Linn. Soc.* xxii. 294; pseudobulbis parvis ovoideis, foliis 3–4-pollicaribus solitariis 2-nisve lineari-oblanceolatis acutis basi articulatis, scapo gracili foliis sæpius breviore nudo, racemo subdense multifloro, bracteis lanceolatis flores parvos subæquantibus, sepalis elliptico-oblongis subacutis 1-nerviis, petalis angustioribus marginibus revolutis, labello sessili obovato-oblongo sepalis æquilongo apice truncato v. obtuse sub-3-dentato, columna incurva exalata. L. auriculata, *Reichb. f. in Flora*, 1872, 77 (*non Miquel*).

Hab. Sikkim Himalaya; at Rungbee, alt. 6,500 ft., *Clarke*. Khasia mountains, on trees at Myrung, *J. D. H. and J. Thomson*. Travancore; on the Anamallay hills, *Beddome* (*fid. Ridley*).

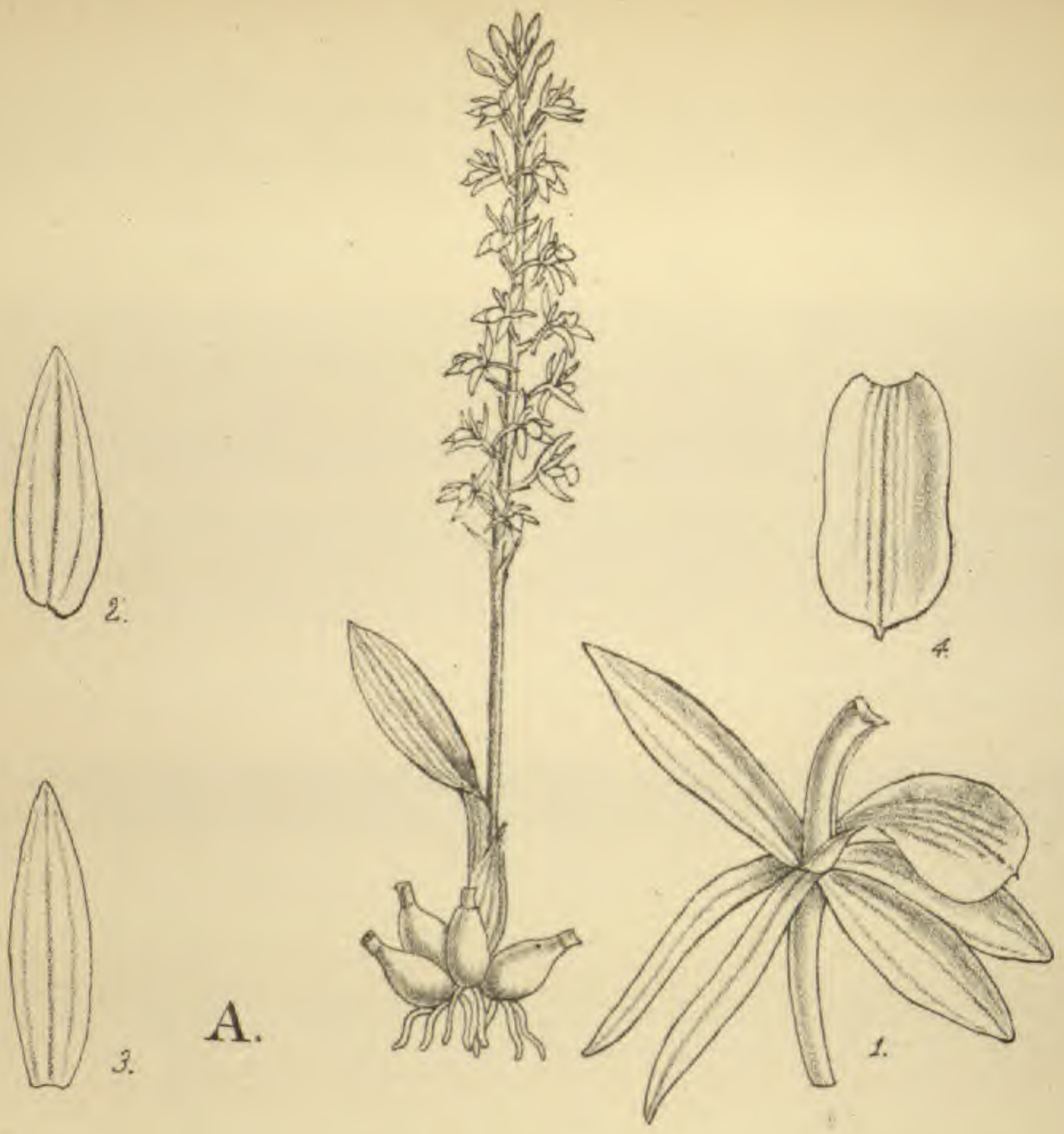
Pseudobulbs short or long, $\frac{1}{3}$–$\frac{2}{3}$ in., stout or slender. *Leaves* 2–4 by $\frac{1}{3}$–$\frac{1}{2}$ in., sessile or narrowed into a petiole, rather coriaceous. *Racemes* 2–3 in.; bracts $\frac{1}{4}$ in., slender. *Flowers* $\frac{1}{4}$ in. diam., white, inodorous.—The name is not appropriate, but Mr. Ridley assures me that this is the plant he described under it.

B.—**L. (Coriifolia) perpusilla,** *Hook. f. in Fl. Brit. Ind. ined.*; pseudobulbis minutis, foliis 4–6 linearibus acutis coriaceis 1-nerviis basi articulatis, scapo foliis longiore, racemo plurifloro, bracteis subulatis, floribus minutis, sepalis oblongis obtusis 1-nerviis crassiusculis marginibus recurvis, petalis angustis, labello carnoso subquadrato truncato interdum apiculato angulis basi in lobos laterales obscuros dilatatis, columna crassa alis longiusculis.

Hab. Sikkim Himalaya; on trees, alt. 8,000–9,000 ft., *J. D. H., Clarke, Gamble*.

Planta carnosula, 2–3-uncialis, scapo foliis duplo longiore, floribus vix $\frac{1}{10}$ poll. diametro, flavidis; labello forma et magnitudine variabili. —J. D. Hooker.

A.—L. pusilla. Fig. 1. Flower. 2 and 3. Sepals. 4 and 5. Lips. *All enlarged.*
B.—L. perpusilla. Fig. 6 and 7. Sepals. 8. Ovary, column and lip. 9 and 11. Forms of lip. 10. Flower with reduced lip. *All enlarged.*



M.S. del. et lith.

A. Liparis Prainii, Hook. f.
B. —— Duthiei, Hook. f.

Plate 1857.

A.—LIPARIS PRAINII.

B.—LIPARIS DUTHIEI.

Orchideæ. Tribe Liparideæ.

A.—**L. (Coriifoliæ) Prainii**, *Hook. f. in Fl. Brit. Ind. ined.*; pusilla, pseudobulbis cæspitosis ovoideis, folio parvo elliptico-lanceolato acuto coriaceo basi late vaginante, scapo stricto, racemo multifloro, floribus minutis, sepalis rectis 3-nerviis marginibus revolutis, dorsali lineari-oblongo acuto, lateralibus paullo brevioribus, petalis linearibus 1-nerviis, labello sepalis breviore sessili recurvo oblongo apiculato ecalloso, columna elongata exalata.

Hab. Upper Assam; on the Naga hills, *Prain*.

Tota planta 3-pollicaris, folio $\frac{2}{3}$-pollicari, floribus $\frac{1}{10}$ poll. expans.

A very distinct little plant, of which the only specimen I have seen was kindly communicated by Dr. King. More specimens may require some modification of the above characters.—J. D. Hooker.

B.—**L. (Coriifolia) Duthiei**, *Hook. f. in Fl. Brit. Ind. ined.*; pusilla, pseudobulbis cæspitosis ovoideis, foliis 1–3 petiolatis elliptico-lanceolatis acutis subcoriaceis basi articulatis, scapo stricto, racemo densifloro, floribus minutis, sepalis petalisque planiusculis revolutis 1-nerviis, sepalis lanceolatis, petalis linearibus, labello sepalis breviore sessili subquadrato-oblongo apice truncato crenato v. breviter trilobo ecalloso, columna elongata exalata.

Hab. Western Himalaya; on trees in the Gori valley, Kumaon, alt. 2,000–3,000 ft., *Duthie*.

Pseudobulbi $\frac{1}{3}$ poll. longi, vaginati. *Folia* 1–$1\frac{1}{2}$ poll. longa. *Bracteæ* lanceolatæ, ovarium subæquantes. *Flores* $\frac{1}{12}$ poll. expans., flavi ?.

This in habit and size a good deal resembles *L. Prainii*, but really belongs to a different group, with flat perianth segment.—J. D. Hooker.

A.—L. Prainii. Fig. 1. Flower. 2 and 3. Sepals. 4. Lip. *All enlarged.*
B.—L. Duthiei. Fig. 5. Flower. 6 and 7. Lips. *All enlarged.*

M.S. del. et lith.

Liparis bistriata, Par. & Rchb. f.

Plate 1858.

LIPARIS BISTRIATA, *Par. et Reichb. f.*

Orchideæ. Tribe Liparideæ.

L. (Coriifoliæ) bistriata, *Par. et Reichb. f. in Trans. Linn. Soc.* xxx. 155; pseudobulbis cæspitosis demum caudiciformibus elongatis cylindraceis bifoliis, foliis sessilibus cum pseudobulbo articulatis, elliptico-oblongis subacutis coriaceis multinerviis, scapo robusto foliis breviore, racemo multifloro, floribus parvis, bracteis ovaria æquantibus, sepalis oblongo-lanceolatis obtusis 3-nerviis, marginibus revolutis, petalis angustis 1-nerviis, labello sepalis æquilongo panduriformi v. cuneato-oblongo truncato apice integro v. 3-crenato, columnæ alis parvis rotundatis v. subuncinatis, capsulis subglobosis.

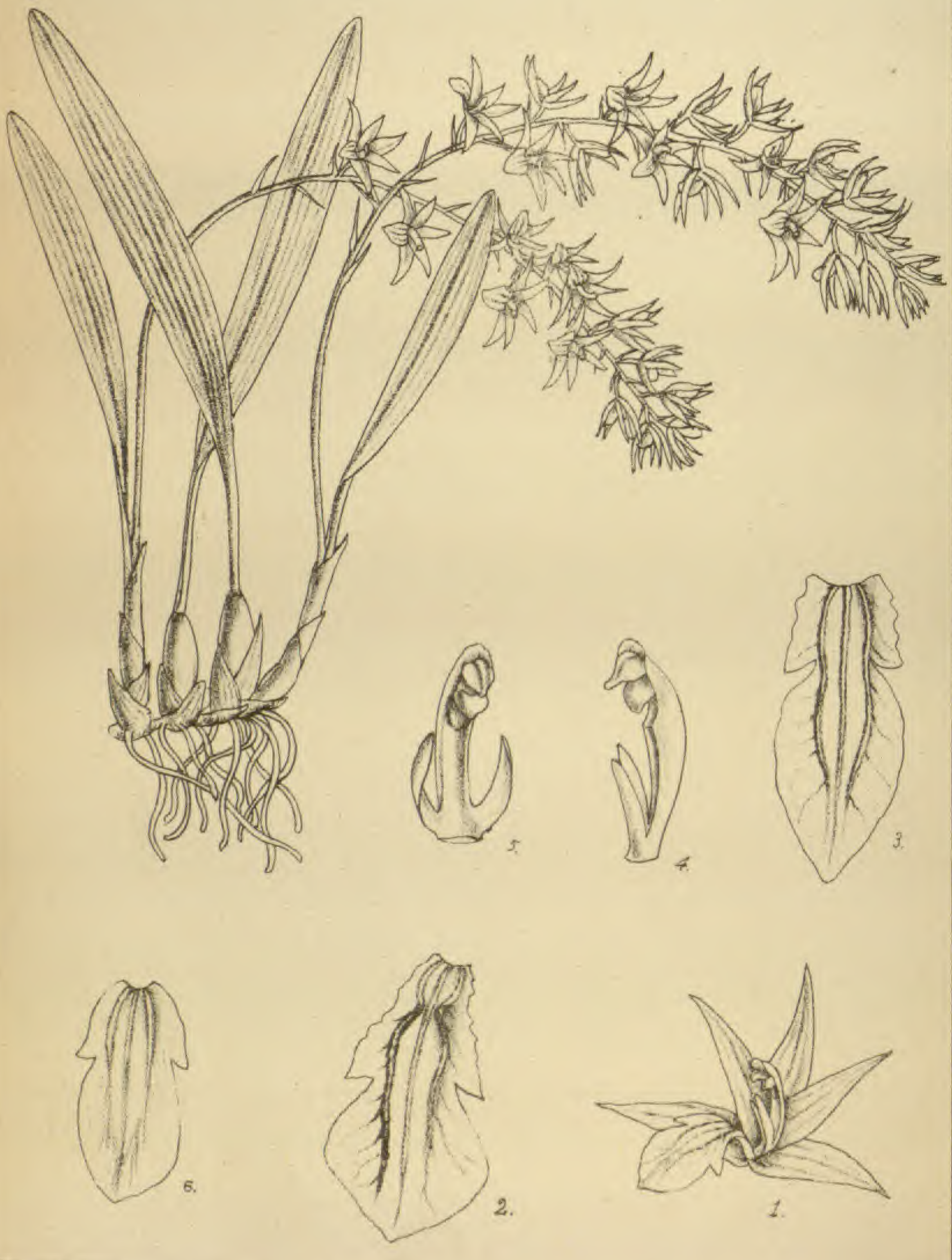
Hab. Sikkim Himalaya, the Khasia mountains, and Tenasserim.

Pseudobulbi seu caudices demum 3–4 poll. longi, diametro pennæ olorinæ, nudi, teretes, stricti v. torti. *Folia* 3–4 poll. longa, patentia. *Scapus* nunc valde robustus, nudus v. pauci-bracteatus, una cum racemo 4–6-pollicaris. *Flores* $\frac{1}{3}$ poll. expansi, flavidi. *Columna* et *labellum* ut videtur varia, alis nunc uncinatis. *Capsula* subglobosa $\frac{1}{3}$ poll. diametro.

Var. *robusta*; pseudobulbis brevioribus crassioribus vaginis 2 latis obtusis vestitis, scapo incrassato, bracteis floribusque majoribus, labello panduriformi apice cordato, capsulis clavatis.—Naga hills, on Kohima, *Prain*.

In the specimens from the Naga hills the pseudobulbs are shorter and more robust, fully $\frac{1}{2}$ in. diam. when fresh; the scape and rachis of the raceme singularly robust, and when dry 2-edged from the shrinking of the fleshy outer cellular substance, the bracts and flowers larger, and capsules longer and more clavate. It may be a different species.—J. D. Hooker.

Fig. 1. Flower. 2 and 3. Lip and column; and 5, petal—all from Tenasserim specimen. 5, 6, and 7. Column and lip from Khasia specimen.



M.S. del et lith.

Dendrochilum linearifolium, Hook.f.

Plate 1859.

DENDROCHILUM LINEARIFOLIUM, *Hook. f.*

Orchideæ. Tribe Dendrobieæ.

D. linearifolium, *Hook. f. in Fl. Brit. Ind. ined.*; pseudobulbis parvis ovoideis confertis, folio petiolato oblongo v. lineari-oblongo obtuso crasse coriaceo, scapo gracili decurvo, bracteis subulato-lanceolatis ovaria æquantibus, floribus parvis, sepalis lanceolatis acuminatis petalisque consimilibus 3-nerviis, labello oblongo v. obovato lobis lateralibus parvis acutis, terminali ovato-oblongo v. subquadrato subacuto, disco 3-carinato, columnæ ramis basilaribus linearibus subacutis.

Hab. Malay Peninsula, at Chosang, *Scortechini*; on Batang Padang, alt. 4,900 ft., *Wray*.

Rhizoma crassum; pseudobulbi $\frac{1}{3}$–$\frac{2}{3}$ poll. longi, recti v. curvi. *Folium* 1–2 poll. longum, in petiolum $\frac{1}{3}$–$\frac{2}{3}$ poll. longum angustatum. *Scapus* una cum racemo 3–5-pollicaris. *Flores* $\frac{1}{3}$ poll. expansi, virescentes.—J. D. Hooker.

Fig. 1. Flower. 2, 3, and 6. Lips of different forms. 4 and 5. Side and front view of column. *All enlarged.*

M.S.del.et lith.

Tainia macrantha, Hook.f.

Plate 1860.

TAINIA MACRANTHA, *Hook. f.*

Orchideæ. Tribe Bletieæ.

T. macrantha, *Hook. f.* (*sp. nov.*); glaberrima, pseudobulbis elongatis teretibus, folio longe petiolato elliptico acuminato basi acuto, scapo robusto folio longiore paucifloro 2–3-vaginato, floribus magnis 3 poll. expansis, sepalis acuminatis, dorsali lanceolato, lateralibus majoribus basi latioribus, petalis lanceolatis acuminatis, mento rotundato, labello sessili subhastato, basi cuneato, lobis lateralibus parvis triangularibus rotundatisve obtusis disco inter lobos laterales breviter 2-carinato.

Hab. South China; prov. Lofaushan, opposite Hongkong, in deep shade under the spray of a waterfall, alt. 3,100 ft., *C. Ford.*

Rhizoma crassum; nodi vestigiis vaginarum fibrosis criniti. *Pseudobulbi* 3-pollicares, diametro pennæ olorinæ. *Folium* 6 poll. longum, membranaceum, 5-nerve, petiolo 2-pollicare. *Scapus* pedalis, robustus; vaginæ 2-pollicares, appressæ. *Flores* distantes, breviter pedicellati; bracteæ lanceolatæ $\frac{1}{3}$ poll. longæ; labellum 9-nerve; nervis crassis arcuatis, gibbo 0.—J. D. Hooker.

This and *T. cordifolia* (Plate 1861) are very handsome species.—J. D. Hooker.

Fig. 1. Lip. *Enlarged.*

M.S. del et lith.

Tainia cordifolia, Hook. f.

Plate 1861.

TAINIA CORDIFOLIA, *Hook. f.*

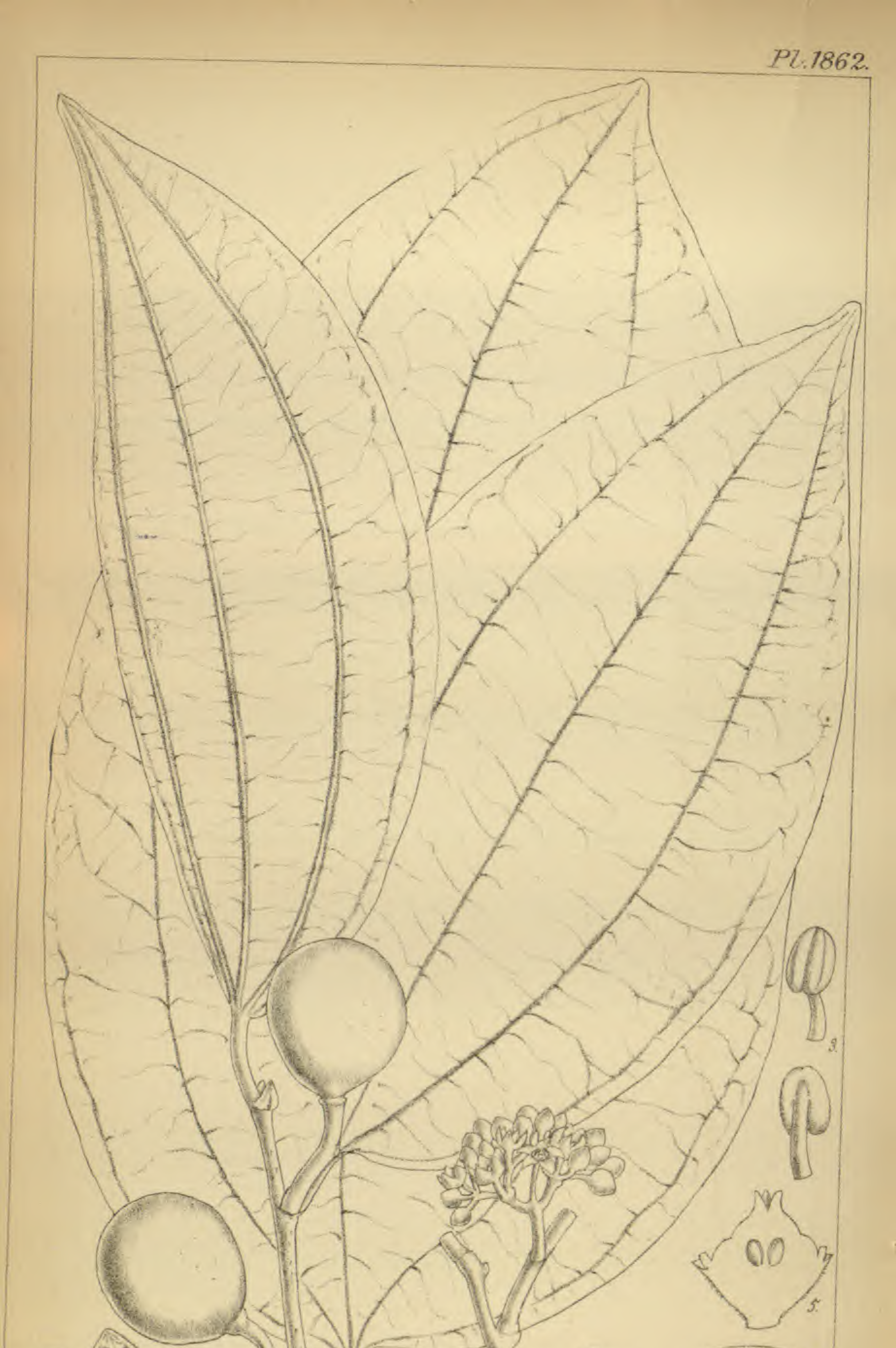
Orchideæ. Tribe Bletieæ.

T. cordifolia, *Hook. f.* (*sp. nov.*); glaberrima, pseudobulbis brevissimis, folio crasse petiolato late ovato-cordato acuminato, scapo robusto folio multoties longiore paucifloro 2–3-vaginato, floribus 2 poll. expansis, sepalis acuminatis dorsali lanceolato, lateralibus majoribus basi latioribus, petalis lanceolatis acuminatis, mento late conico obtuso, labello sessili ovato acuminato lateribus rotundato-dilatatis, disco medio utrinque 2-lamellato.

Hab. Formosa; at Kelung, *C. Ford.*

Rhizoma crassiusculum, internodiis fere nullis. *Folium* 5–6 poll. longum, 7-nerve, lobis basilaribus rotundatis incumbentibus. *Scapus* pedalis, vaginis 1–2-pollicaribus appressis. *Flores* breviter pedicellati; bracteæ lanceolatæ; sepala et petala brunnea; labellum egibbosum, flavum, basin versus album, roseo-maculatum, 9-nerve, nervis crassis arcuatis, gibbo 0. *Pollinia* 8, parva.—J. D. Hooker.

Fig. 1. Lip. 2. Column and anther. *Both enlarged.*



M.S. del. et lith.

Zizyphus Chloroxylon, Oliv.

Plate 1862.

ZIZYPHUS CHLOROXYLON, *Oliv.*

Rhamnaceæ.

Z. Chloroxylon, *Oliv.*; arbor glaberrima ramulis divaricatis inermis, foliis alternis petiolatis ovato- vel oblongo-ellipticis acutiusculis usque ad apicem trinerviis, cymis plurifloris corymbosis breviter pedunculatis, pedicello flore subæquilongo, calycis lobis ovato-deltoideis bifoveolatis medio intus conspicue carinatis, petalis 0, fructibus subglobosis lævibus monospermis, pericarpio crustaceo.—Ceanothus Chloroxylon, *Nees, Syst. Laur.* p. 660; Laurus Chloroxylon, *L. Sp. Pl.* ed. ii. p. 528; *Browne, Jamaica*, p. 187, t. 7, fig. 1; *Sloane, Jamaica*, ii. p. 85, t. 197, fig. 1.

Hab. Jamaica. (Our specimens were collected by *Messrs. Marsh, T. Harrison, G. Douet*, and *Dr. Dewar.*)

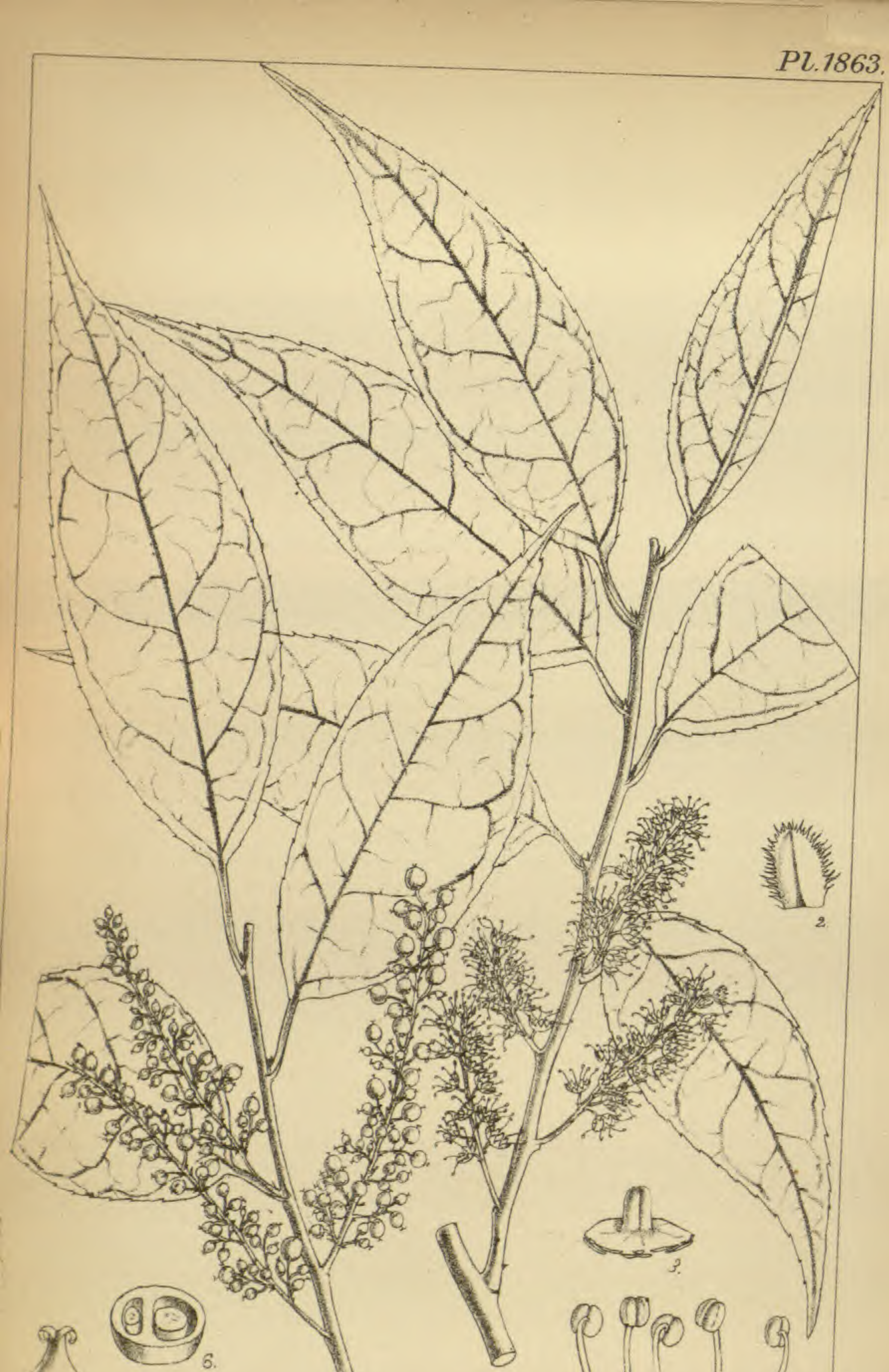
Folia 4–7 poll. longa, $1\frac{3}{4}$–4 poll. lata, integra, glabra; nervis subtus prominulis; petiolus $\frac{1}{3}$–$\frac{1}{2}$ poll. longus. *Alabastra* fulvo-puberula. *Fructus* 8–10 lin. diam. *Semen* pericarpio conforme; cotyledonibus plano-convexis, radicula infera.

Specimens recently supplied by the Botanical Department, Jamaica, collected by Dr. Dewar and Mr. George Douet, enable us finally to determine this important timber-tree, the 'Cogwood' of Jamaica, generically.

Dr. P. Browne (*l. c.*) describes it as 'common in many parts of the mountains,' and the wood as 'very tough and hard'—generally esteemed one of the best in the island. *Z. Chloroxylon* differs from the more typical species of the genus in the absence of petals and in the comparatively thin pericarp, the inner stratum of which is bony. The fruit, however, is closely similar to that of *Z. calophylla*, Wall. For notice of this tree, see June Number (No. 30) of the Kew Bulletin, 1889.—D. Oliver.

Fig. 1. Expanded flower. 2. Calyx-lobe. 3. Stamens. 4. Ovary, calyx-segments removed. 5. Same, vertical section. 6. Transverse section of fruit. *Excepting fig. 6, enlarged.*

Pl. 1863.



S. del. et lith.

Ilex racemosa, Oliv.

Plate 1863.

ILEX RACEMOSA, *Oliv.*

Ilicineæ.

I. racemosa, *Oliv.* (*sp. nov.*); frutex sæpe scandens ramulis gracilibus glabris v. hornotinis obsolete puberulis, foliis petiolatis membranaceis oblongo-lanceolatis graciliter acuminatis basi rotundatis serrulatis glabris (v. sub lente minute puberulis), stipulis minutis subulatis deciduis, floribus abortu dioicis parvis racemosis, racemis sæpius in axillis foliorum inferiorum plurifloris, sepalis minutis lanceolatis acutis, petalis calyce subæquilongis oblongo-ellipticis obtusis ciliolatis, filamentis corolla 2–3-plo longioribus antheris rotundatis dorsifixis, pistilli rudimentum in fl. ♂ obtusum breviter columnare; fructu ellipsoideo-globoso v. subgloboso sæpius monospermo, endocarpio crustaceo stylo brevissimo persistente sæpius bidentato lobulis divaricatis coronato.

Hab. Ichang, Prov. Hupeh, China, *Dr. A. Henry* (Nos. 1863, 3527, 4117A, 7189).

Folia 2–4 poll. longa, $\frac{3}{4}$–$1\frac{1}{3}$ poll. lata; petiolus $\frac{1}{4}$–$\frac{1}{2}$ poll. longus. *Racemi* 1–2 poll. longi, interdum inferne breviter ramosi. *Flores* albidi, 1 lin. lati. *Drupæ* læves 2 lin. longæ.

In *facies* this plant recalls the racemose-flowered species of *Embelia*. The fruits I find rarely contain fully developed seed. Although the pistil is normally dicarpellary, the pericarp is usually 1-locular with a globose conformable smooth putamen.—D. Oliver.

Fig. 1. Staminate flower. 2. Petal. 3. Rudiment of pistil. 4. Pistillate flower. 5. Calyx and corolla. 6. Young fruit with bilocular endocarp. *Enlarged.*

M.S. del, et lith

Calanthe phajoides, Reichb.f.

PLATE 1864.

CALANTHE PHAJOIDES, *Reichb. f.*

ORCHIDEÆ. Tribe CŒLOGYNEÆ.

C. phajoides, *Reichb. f. in Bonpland.* v. 37; *Icon. Orchid.* 207, t. 79, f. 2; glaberrima, foliis longe petiolatis anguste lineari-lanceolatis, scapo foliis breviore laxe pluri-vaginato, bracteis caducis, sepalis ovatis subacutis, petalis elliptico-ovatis subacutis sepalis æquilongis, labello infra apicem columnæ inserto deorsum in calcar crassum clavatum columnæ adnatum sepalis æquilongum producto, lobis lateralibus late ovatis obtusis terminali late obcordato angustioribus, disco inter lobos laterales lamellis 2 parvis aucto.

HAB. Malayan Peninsula; Perak, *Scortechini*; on Gunong Batu, alt. 3,400 ft., *Wray*; Sumatra, *Beccari* (No. 389); Java, *Zollinger*.

Folia 12–20 poll. longa, $\frac{3}{4}$–1 poll. lata, nervosa, in petiolum angustata. *Scapus* pedalis, vaginis tubulosis laxis 1–2-pollicaribus. *Racemus* 10–12-florus; bracteæ non visæ. *Flores* $\frac{2}{3}$ poll., albi fid. *Reichb. f.*, labellum aurantiacum fid. *Wray*.—J. D. HOOKER.

Fig. 1. Sepal. 2. Petal. 3. Lip and column. 4. Lip. 5. Lobe of column.—*All enlarged.*

M.S. del, et lith,

Diphylax urceolata. Hook. f.

Plate 1865.

DIPHYLAX URCEOLATA, *Hook. f.*

Orchideæ. Tribe Habenarieæ.

Diphylax, *Hook. f.* (*gen. nov.*). *Sepala* subæqualia, conniventia, lanceolata, 1-nervia. *Petala* lineari-oblonga, sepalis æquilonga, subacuta, 1-nervia. *Labellum* sepalis æquilongum, recurvum, linearilanceolatum, basi concavum, ultra medium teres solidum apice acuminato; calcare incurvo, collo constricto, dein in saccum fusiforme v. conoideum inflato. *Columna* brevissima, utrinque calcare erecto antheræ erectæ parallelo instructa; rostellum minutum; anthera sessilis, oblonga, erecta, dorso carinata, carina in aristam terminalem producta, loculis contiguis, adnatis parallelis; pollinia in loculis e granulis grossis, caudiculis brevissimis, glandulis parvis nudis collateralibus.—Herba *parvula, glaberrima, terrestris, caule brevi, vaginato.* Folia *pauca, infimo elliptico-lanceolato acuto membranaceo sub-5-nervi; cetera multo minora, secus scapum sparsa.* Scapus *cum racemo decurvus.* Flores *racemosi, secundi, breviter pedicellati; bracteæ ovatæ v. lanceolatæ, ovario brevi æquilongæ; sepala alba; petala rosea; labellum viride.*

D. urceolata, *Hook. f.*; Habenaria urceolata, *Clarke in Journ. Linn. Soc.* xxv. 73, t. 30.

Hab. Sikkim Himalaya; Yakla, alt. 10,000 ft.; and Naga Hills, Jakpho, alt. 9,000 ft., *Clarke.*

Tota planta 3–4-pollicaris, decurva; radicibus ignotis. *Folium* infimum 2-pollicare, sessile. *Flores* conferti, sepalis $\frac{1}{4}$ poll. longis.

I know of no Habenarioid genus in which this curious little plant could be placed. The structure of the lip is very curious. The more or less broad lanceolate concave half next the column has the margin involute for the other half, forming a solid body, which appears to be in some specimens grooved above. The spur Mr. Clarke describes in his notes as transparent and glossy. The two slender spurs of the column, one on each side of the anther, and as long as it is, are very curious.—J. D. Hooker.

Fig. 1. Flower. 2. Sepal. 3. Petal. 4 and 5. Ovary lip and column, front and side view. 6. Front view of column and its lateral appendages. 7. Pollen-mass.—*All enlarged.*

W. Fitch, del.

Isachne comata, Munro,

Plate 1866.

ISACHNE COMATA, *Munro.*

Gramineæ. Tribe Paniceæ.

I. comata, *Munro MSS.*; panicula ampla, spiculis oblongo-ovalibus, glumis sterilibus apice comato-pilosis, gluma fertili floris inferioris ♀ superne floris superioris ☿ minute pedicellatis toto dorso hirsuta, quam inferior fere $\frac{1}{3}$ minore, foliorum laminis lævibus.

Hab. Aneitum, in planitie frequens, *Milne.*

Culmi robusti, elati, teretes, glaberrimi, fistulosi, ad apicem usque foliati. *Foliorum* vaginæ arctæ, internodia superantes, altero margine oreque ciliatæ, nodis glabræ; ligula in cilia longiuscula densa soluta; lamina e basi rotundata lineari-lanceolata, longe acuminata, 30 cm. longa, circ. 2 cm. lata, patula, firma, subtus glaucescens, glaberrima, costa media tenui, nervis lateralibus utrinque 6–7, interjectis secundariis 5–7-nis tenuissimis dense confertis. *Panicula* ovata circ. 20 cm. longa, patens, decomposita, rhachi glaberrima angulosa, ramis primariis solitariis spirali ordine enatis, mox supra basin ramulosis, inferioribus 10–12 cm. longis, cum ramulis subimbricato-floriferis glaberrimis. *Spiculæ* subterminales ramulorum pedicello duplo longiores, omnes 2·5 mm. longæ, oblongo-ovales, biconvexæ, pallide stramineæ, pilis comatæ: glumæ steriles subæquales fertiles æquantes, elliptico-lanceolatæ, acutæ, convexæ, membranaceæ, 7–9-nerves, superne pilis basi tuberculatis gluma 2–3-plo brevioribus rigidulis comatæ; fertilium inferior ovali-oblonga, obtusiuscula, subchartacea, albida, opaca, dorso scaberula, superne marginibusque breviter hirtula, callo basilari minuto barbulato, tenuissime 5-nervis, amplectens paleam ei similem sed angustiorem binervem glabram floremque ☿, antheris 1·5 mm. longis, ovario parvulo, stigmatibus vix 0·5 mm. longis angustis inclusis; superior (quarta) inferiore $\frac{1}{4}$–$\frac{1}{3}$ minor, ei similis sed toto dorso strigoso-hirsuta, callo longius barbato, subenervis, fovens paleam ovatam acutam glabram floremque ♀, stigmatibus late oblongis brunnescentibus fere 1 mm. longis infra spiculæ apicem exsertis.

A very distinct species with the habit of *I. albens*, Trin., but longer spikelets and the glumes very hairy above. There are only a few species with hairy sterile glumes: for example, the Javan *I. firmula*, Büse, with rough leaves, bristly at their base; the Cuban *I. leersioides*, Griseb., with a lax panicle, the subglobose spikelets shorter than their pedicels, &c.; both slender plants with ascending culms.—E. Hackel.

Fig. 1. Spikelet. 2. Empty glumes. 3. Lower flower. 4. The same, opened and more enlarged. 5. Upper flower. 6. Pistil of the latter. *Enlarged.*

M.S. del, et lith.

Tupistra chinensis, Baker.

Plate 1867.

TUPISTRA CHINENSIS, *Baker*.

Liliaceæ. Tribe Aspidistreæ.

T. chinensis, *Baker* (*sp. nov.*) ; rhizomate crasso cylindrico elongato, foliis sessilibus oblanceolatis subcoriaceis, floribus in spicam densam erectam aggregatis, pedunculo brevi, bracteis ovatis foliaceis, perianthio luteo-viridulo tubo brevi campanulato, segmentis ovatis cuspidatis, staminibus ad tubi faucem uniseriatis incurvatis filamentis brevissimis antheris subglobosis, stigmatibus sessilibus.

Hab. China ; Patung district, *Henry*, 5023.

Folia 6–9 poll. longa, supra medium 15–18 lin. lata, ad basin sensim angustata. *Perianthium* 2 lin. longum. *Bacca* 4 lin. diam.

This is very distinct from any of the species already known, which are Himalayan and Malayan.—J. G. Baker.

Fig. 1. Flower complete. 2. Front and back view of anthers. 3. Pistil. 4. Transverse section of ovary. *All enlarged.*

M.S. del, et lith.

Dioscorea rhipogonoides, Oliv.

Plate 1868.

DIOSCOREA RHIPOGONOIDES, *Oliv.*

Dioscoreaceæ.

D. rhipogonoides, *Oliv.* (*sp. nov.*) ; glaberrima, foliis oppositis integris anguste ovali-oblongis breviter acuminatis basi obtusis trinerviis (v. subquinquenerviis), venulis prominulis reticulatis tenuiter coriaceis, fl. ♂ in spicis interruptis paniculatis dispositis, paniculis sessilibus folio brevioribus, capsulis retusis lobis rotundatis.

Hab. Hongkong, *C. Ford.*

Folia 3–4½ poll. longa, 9–14 lin. lata; petiolus ⅔–1¼ poll. longus basi sæpius persistente. *Capsula* ½–⅔ poll. longa, 1 poll. lata.

Nearly allied to *D. oppositifolia*, L., of India. Perhaps the specimens referred to this species in 'Flora Hongkongensis' belong here. I do not find any seeds remaining in our capsules.—D. Oliver.

Fig. 1. Fragment of spike with ♂ flowers. 2. Outer, and 3. inner perianth-segments. 4. Inner perianth and stamens. 5. Stamens. 6. ♀ flower. *Enlarged.*

W. fitch del.

Andropoŝon exaltatus, R.Br.

Plate 1869.

ANDROPOGON EXALTATUS, *R. Brown.*

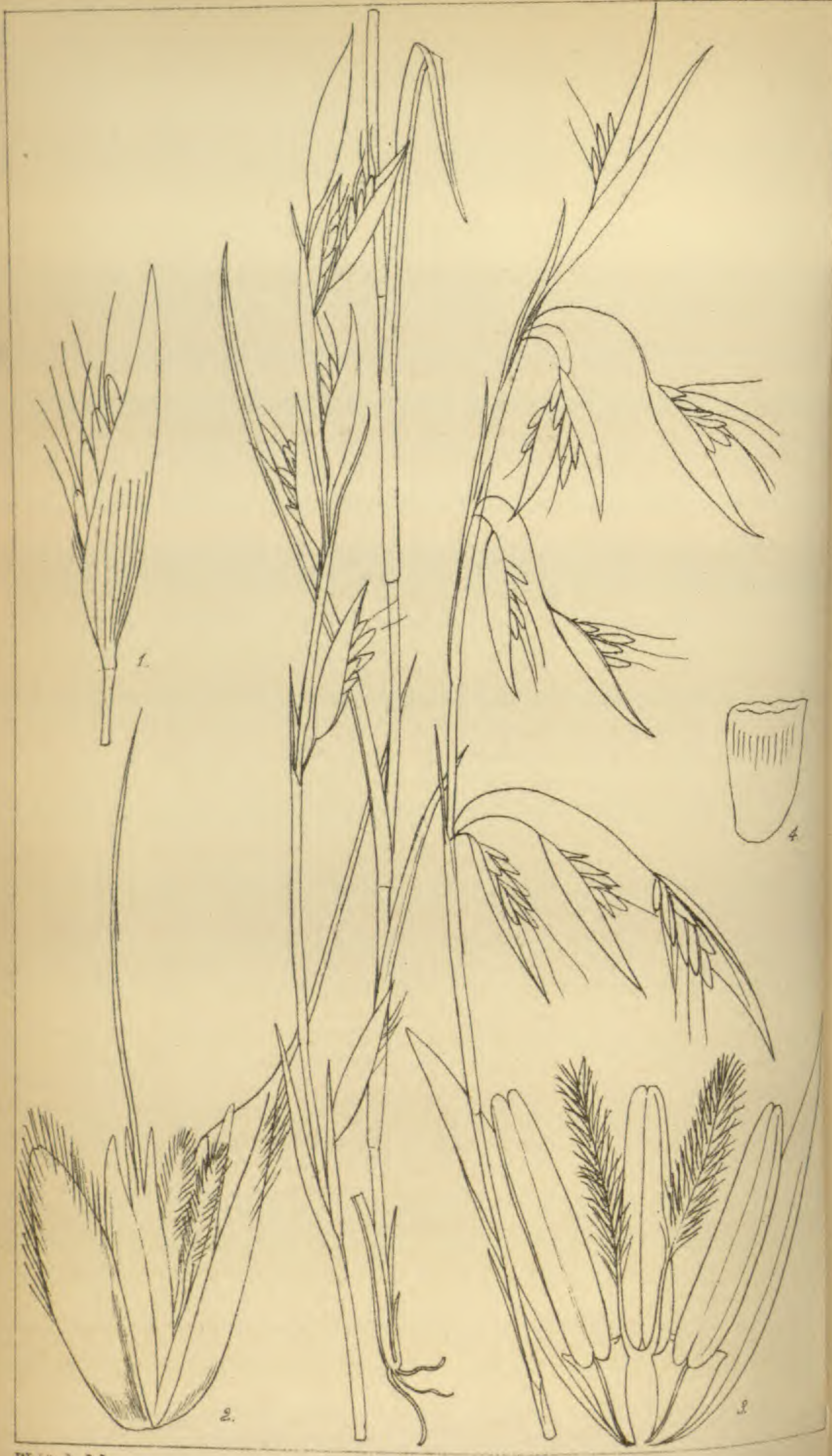
Gramineæ. Tribe Andropogoneæ.

A. (*Cymbopogon*) **exaltatus**, *R. Brown, Prodr.*, p. 202; var. ambiguus, *Hack. in A. et C. Decand. Monogr. Phan.* vol. vi. p. 596; foliis anguste linearibus subjunceis, ligula longiuscula, lanceolata, panicula densiuscula, racemis semper erectis, spicularum ♀ gluma prima præter nervos carinales 3–5-nervi. A. ambiguus, *Steud. Synops.* i. p. 385.

Hab. Australia (conf. *Benth. Fl. Austral.* vii. p. 532). The specimen figured was according to Munro, collected by Drummond in W. Australia and his No. 100, which Steudel has called *A. ambiguus*. The genuine *A. exaltatus*, from N. Australia, is somewhat stouter, with the leaves broader, mostly flattened, the panicle yet more compound, the spikes glomerate.

Culmi 30–80 cm. alti, erecti, superne paniculatim ramosi. *Filiorum* vagina lævis, striata, sæpe pruinosa; ligula (præcipue foliorum innovationum) 3–8 mm. longa, acuta, membranacea, demum fissa, intus basi pilis stipata; lamina elongata, culmum sæpe subæquans, juncea v. fere filiformis, in sicco sæpe complicata v. semicylindrica, longe setaceo-acuminata, acumine sæpius circinnato, rigida, glauca, glaberrima v. scaberula, intus albida, subtus costis prominulis percursa. *Panicula* spuria (foliis intercepta) 8–20 cm. longa, densiuscula, angusta (fere linearis), ramis primariis 1–5-nodibus, secundarios basilares binos superioresque simplices edentibus, his filiformibus simplicibus v. ramulos tertianos gignentibus, erectis v. demum arcuato-patulis. *Spathæ* 2·5–3 cm. longæ, quam racemorum pedunculus communis duplo triplove longiores, racemos plerumque æquantes. *Racemi* (spicæ auctorum) bini, semper erecti, circ. 2 cm. longi, 6–7-articulati, articulis pedicellisque spicularum lateralium dorso marginibusque longe sericeo-villosis, villis summis articulo longioribus spiculas fere obtegentibus. *Spiculæ sessiles* 5–7 mm. longæ, acuminato-lanceolatæ, pallidæ; gluma prima longe acuminata, sub-bidentata herbaceo-chartacea, bicarinata, carinis anguste marginatis, præter nervos carinales manifeste 3–5-nervis, dorso plana, basi callo pilis dimidiam glumam æquantibus barbato, secunda primam æquans, late lanceolato-navicularis, acuta v. breviter mucronulata, carina scaberula, marginibus hyalinis patenti-ciliatis, tertia quam prima paullo brevior, oblonga, hyalina, binervis, ciliata; quarta quam secunda $\frac{1}{4}$ brevior, lineari-oblonga, in parte $\frac{1}{3}$ superiore in lacinias duas subulato-lanceolatas fissa, glabra, aristam ex fissura emittens spiculam plus duplo superantem glaberrimam perfectam, cujus columna fusca quam subula pallida subduplo brevior est. *Palea* 0. *Lodiculæ* glabræ. *Antheræ* 1·5 mm. longæ. *Stigmata* linearia, stylis longiora. *Spiculæ pedicellatæ* 3–4 mm. longæ, steriles, subulato-lanceolatæ, ad glumam primam 5-nervem secundamque quam prima triplo breviorem redactæ. *Spicula* sessilis ima alterius racemi etiam neutra, mutica. *Odore* saporeque acerbo, terebinthino.—E. Hackel.

Fig. 1. Spathe enveloping the so-called spikes (racemes). 2. Fertile spikelet and pedicel of the sterile one. 3. Fertile spikelet, much enlarged. 4. Upper portion of the first glume. 5. Flowering glume (gl. quarta) with its awn. 6. Lodicules and pistil. *Enlarged.*



W. Fitch, del.

Andropogon ceresiæformis, Nees.

Plate 1870.

ANDROPOGON CERESIÆFORMIS, *Nees.*

Gramineæ. Tribe Andropogoneæ.

A. (*Hypogynium*) **ceresiæformis**, *Nees*, *Fl. Afr. Austr.* p. 109; paniculà spuria simplice, racemis in hujus ramorum apice solitariis spatha elliptico-naviculari fultis, articulis villosis, spiculis sessilibus ☿ oblongis superne villosis, gluma prima involuta.

Hab. Common in Natal and Caffraria, extending to Central Africa and the Niger. Our figure is from a Natal specimen received from Dr. Harvey.

Perennis. Culmi graciles, inferne simplices, superne paniculatim ramosi. *Foliorum* vaginæ arctæ, internodiis breviores, glabræ v. crispato-villosulæ; ligula brevissima, truncata, glabra; laminæ lineares, acuminatæ, 5–8 cm. longæ, erecto-patulæ, rigidæ, glabræ v. versus basin pilis crispatis adspersæ, præter marginem scaberulum læves, nervo medio tenui subtus prominulo, lateralibus tenuissimis. *Panicula* spuria (i.e. foliis intercepta) 15–30 cm. longa, linearis, paupera, ramis sæpius binis v. ternis raro solitariis brevibus suberectis v. arcuato-patentibus (nutantibusve?) filiformibus uninodibus v. binodibus, racemo terminatis, cujus spatha 2–3 cm. longa elliptico-navicularis membranacea, colorata, glaberrima, racemi brevissime pedicellati maximam partem obtegit, nil nisi spiculas ♂ nudas relinquens. *Racemus* 1·5 cm. longus, crassiusculus, densiflorus, multiarticulatus, articulis pedicellisque (spicularum ♂) lineari-filiformibus villis albis ipsis 3–4-plo brevioribus vestitis. *Spiculæ sessiles* oblongæ, 4 mm. longæ, flavescenti-virides et rufo-variegatæ; gluma prima coriaceo-chartacea, anguste truncata, obscure 3–4-nervis, medio dorso nitens, superne et margines versus villosa; secunda primam æquans, lanceolato-navicularis, acutiuscula, carinata, sæpius in aristam ipsam æquantem v. subsuperantem rectam abiens, dorso superne pilosa; tertia late oblonga, obtusa, hyalina, enervis, ciliata; quarta reliquis $\frac{1}{4}$ brevior, ad $\frac{1}{3}$ usque in lacinias subulato-lanceolatas glabras fissa, ex fissura aristam emittens glabram, spicula 3plo–4plo longiorem. *Palea* 0. *Lodiculæ* cuneatæ, glabræ. *Stamina* 3, antheris 2 mm. longis. *Stigmata* lineari-oblonga. *Spiculæ pedicellatæ* ♂ 4 mm. longæ, oblongæ, obtusæ, muticæ, dense imbricatæ, gluma prima 7-nervi, secunda 5-, tertia 3-nervi, sine gluma quarta et palea; antheræ 2·5 mm. longæ.

In some of Schweinfurth's specimens (No. 2191) the spikelets are awnless. The species has been placed in the subgenus *Cymbopogon* by

W. Fitch, del.

Andropogon laniger, Desf.

Plate 1871.

ANDROPOGON LANIGER, *Desf.*

Gramineæ. Tribe Andropogoneæ.

A. (*Cymbopogon*) **laniger**, *Desf. Fl. Atl.* 2, p. 379; foliis junceis; ligula brevi, truncata; racemis demum deflexis, spiculæ fertilis gluma prima præter nervos carinales enervi. A. eriophorus, *Willd. Sp. Pl.* iv. 910; A. circinnatus, *Hochstett. & Steud. in Hb. Schimp. Arab.* 789; A. Olivieri, *Boiss. Diag. Ser.* i. 5, p. 76.

Hab. Our figure is made from a specimen of *A. circinnatus*, Hochstett. in Herb. Un. It. nr. 789; the typical plant of Desfontaines differs scarcely by its leaves a little thinner. The species extends from Morocco to East India (Scinde), where it overlaps the area of the very closely allied *A. Iwarancusa*, Blane, which differs chiefly by the curious way by which the old leaf-sheaths at the base of the culms split along the middle vein into the strap-shaped parts, while they remain entire in *A. laniger*; in this they are much dilated at their base, in *A. Iwarancusa* they are of equal breadth. The panicle of the latter is much more compound than that of *A. laniger*. In spite of these differences, which seem to justify their specific distinction, the two species are sometimes connected by intermediate forms.

Dense cæspitosus. *Culmi* innovationesque basi vaginis emortuis diu persistentibus valde dilatatis incrassati, 20–60 cm. alti, graciles, a medio paniculatim ramosi. *Foliorum* vagina arcta, teres, glabra; lamina angusta, convoluta siccitate superne subcircinnata, longissime setaceo- v. capillari-acuminata, rigida, glauca, scaberula, culmum subæquans. *Panicula* (spuria) elongata (15–20 cm. longa), laxiuscula ramis plerisque binis raro ternis, arrectis e vagina folii matricis parum v. non exsertis sæpius simplicibus. *Spathæ* scariosæ, rufescentes, lineari-lanceolatæ, 2–3 cm. longæ, glabræ, pedunculum racemorum communem duplo-triplo superans. *Racemi* ('spicæ' auctorum) divergentes v. deflexi, inæquales, 2–6-articulati, articulis pedicellisque spicularum lateralium dorso dense niveo-villosis, villis sursum accrescentibus, summis articulo longioribus, patentibus. *Spiculæ sessiles* ♀ 4–6 mm. longæ, lineari-lanceolatæ, flavo-viridulæ v. apice leviter violascentes: gluma prima herbaceo-membranacea, lineari-lanceolata, acuta, bidentula, marginibus late inflexis, flexuris non marginatis, scabris; secunda primam subæquans, late lanceolata, navicularis, breviter acuminata, marginibus scariosis ciliatis, 1-nervis; tertia quam prima paullo brevior, oblonga, obtusa, hyalina, subenervis, marginibus inflexis ciliata; quarta quam secunda $\frac{1}{3}$ brevior, lineari-oblonga, in $\frac{1}{4}$–$\frac{1}{3}$ superiore bifida laciniis subulato-lanceolatis, ciliata, 1-nervis, ex fissura aristam emittens 5–11 mm. longam (spicula vix v. usque ad subduplo longiorem) rectam v. supra basin subgeniculatam. *Palea* 0. *Lodiculæ* cuneatæ, truncatæ, glabræ. *Antheræ* 2·5–3 mm. longæ. *Stigmata* fusco-purpurea, stylis longiora, e media spicula exserta. *Spiculæ pedicellatæ* 5–7 mm. longæ, lanceolatæ, livide purpurascentes; gluma prima 7–9-nervis, secunda et tertia ut in spicula sessili quarta parva, lineari, mutica. *Stamina* ut in spicula fertili. *Spicula sessilis* ima alterius racemi etiam ♂, mutica. *Odore* forti, grato.—E. Hackel.

Fig. 1. Spathe, with one of the two racemes (the other having been removed). 2. Fertile spikelet. 3. Flowering glume of same. 4. ♀ Floret. 5. Lodicule. *Enlarged.*

A.D.Mulla, del.

Miçrotœna cymosa. Prain.

Plate 1872.

MICROTŒNA CYMOSA, *Prain.*

Labiatæ. Tribe Stachydeæ.

Microtœna *D. Prain* (*gen. nov.*). *Calyx* 5-dentatus obscure sub-10-nervis subæqualiter 5-dentatus, fauce intus nuda. *Corollæ* tubus longe exsertus supra medium ampliatus intus exannulatus, limbus 2-labiatus lobo postico erecto integro galeato, antico patente plano 3-fido lobo medio lateralibus multo minore. *Stamina* 4 æquilonga sub galea adscendentia, filamenta barbata, antheræ juniores divaricatæ demum confluentia uniloculares explanatæ, filamento apice decurvo nutantes. *Discum* antice parum tumens. *Stylus* apice 2-fidus lobis inæqualibus, antico subulato, postico brevissimo. *Nuculæ* apice ovatæ, basi subtriquetræ, læves.—Herba *foliis oppositis dentatis.* Cymæ *oppositæ laxæ thyrsoideo-paniculatæ, bracteolis linearibus deciduis.* Flores *speciosi pedicellati.*

Hab. Assam; Khasia apud Sohra, 4,000 p.s.m. (cult.), *Clarke*, apud Shillong, Assam, 5,000 p.s.m. (cult.), *Mann*! Burma, in collibus Shan, 4,000 p.s.m., *Collett*!

M. cymosa, *D. Prain* (sp. unica). Elata erecta ramosa minute tomentosa, foliis petiolatis late ovato-acutis basi subcordatis crenato-dentatis, cymis laxe paniculatis, calycis dentibus triangularibus postico ceteros parum excedente; corollæ tubo calycem duplo superante, galea cymbiformi fauce inferne minute 2-auriculata apice integra, labio lobo medio anguste elliptico subacuto lateralibus ovato-rotundatis multo minore, staminibus basi villosis, nuculis parvulis.—Plectranthus Patchouli, *Clarke MSS. in Hook. f. Flor. Brit. Ind.* iv. 624.

Perennis, rhizomate serpente, caulibus usque ad 3-ped., ramis inferis 6–9-pollicar.; *foliorum* petiolis $\frac{1}{2}$—$\frac{3}{4}$ poll. laminis 2 poll. longis $1\frac{1}{2}$ poll. latis; *calyce* $\frac{1}{5}$ poll. ovoideo, fructifero, subgloboso; *corollæ* tubo $\frac{1}{4}$ poll., labio $\frac{1}{5}$ poll., galea $\frac{1}{3}$ poll. longa $\frac{1}{8}$ lata; antheris $\frac{1}{20}$ poll. in alabastro divaricatis 2-locularibus, mox confluentia unilocularibus demum explanatis anguste ovatis, rimis posticarum in flore nondum aperto subsursum directis, postea, uti rimæ anticarum, deorsum spectantibus; pollinis micis minutissimis lævibus; nuculis $\frac{1}{25}$ poll. simpliciter et comparate minoribus. In mense Novembri floret; corolla lutea.

Genus habitu foliisque *Craniotomi* accedit, calyce tamen *Cymariæ*, galea *Scutellariæ*, antheris cum pari *Acrotomis* antico consentaneis, filamentis æquilongis a *Stachydeis* ceteris differentibus, labioque lobo medio minimo inter *Labiatas* sui juris longe recedit. Ovarium et fructus haudquaquam *Ajugoidearum*.—D. Prain.

[Ratio etymologica: nominis 'Craniotome' litteræ anagrammatice dispositæ.]

Fig. 1. Æstivation. 2. Flower before expansion. 3. Ditto, after expansion. 4. Calyx, laid open, and pistil. 5. Half of corolla, from bud. 6. Anterior lip, open. 7. Stamens and style. 8. Young anthers. 9. Adult ditto. 10. Pollen-grain. 11. Ovary. 12. Nucules. *Enlarged.*

M.S. del. et lith.

Gymnotheca chinensis, Done.

Plate 1873.

GYMNOTHECA CHINENSIS, *Decaisne.*

Piperaceæ. Tribe Saureæ.

G. chinensis, *Decaisne in Ann. Sc. Nat. Sér. III.* vol. iii. t. 5; herba glabra decumbens v. prostrata interdum nodis radicantibus, foliis reniformi-cordatis apice sæpius late acutatis integris v. margine obscure crenulatis membranaceis subtus reticulatis subtilissime pellucido-punctulatis, petiolo lamina subæquilongo basi dilatato caulem vaginante, racemis solitariis pedunculatis oppositifoliis folio sæpius longioribus, bracteis oblanceolatis herbaceis ovario brevioribus, floribus breviter pedicellatis, staminibus 6 summo v. supra medium ovarii insertis, stylis 4 inferne coalitis longitudinaliter stigmatosis.

Hab. China, prov. Kwangtung, *C. Ford*, No. 311; prov. Hupeh, Ichang, *Dr. Henry* (No. 4180); Szechuen, Omei, *Rev. E. Faber* (No. 897).

Folia $1\frac{1}{4}$–$2\frac{1}{2}$ poll. longa, $1\frac{3}{4}$–3 poll. lata. *Racemi* $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longi, pedunculo æquilongi.

The floral structure is described at length by M. Decaisne (*l. c.*). On the whole, on account of its very different habit and exinvolucrate inflorescence, this plant would seem to deserve maintaining as generically distinct from *Houttuynia*, in which it is merged in 'Genera Plantarum,' though specimens had not been seen by the authors.—D. Oliver.

Fig. 1. Detached flowers. 2. Anther. 3. Ovary, the stamens removed. 4. Ovary laid open. *Enlarged.*

M.S. del. et lith.

Gmelina chinensis, Benth.

Plate 1874.

GMELINA CHINENSIS, *Benth.*

Verbenaceæ. Tribe Viticeæ.

G. chinensis, *Benth.*, *Flora Hongkongensis*, 272; foliis longiuscule petiolatis ovato-ellipticis acutis basi cuneatis triplinerviis supra glabris subtus pallidioribus glanduloso-canescentibus, paniculis terminalibus racemiformibus tomentellis, bracteis ovalibus acutis basi angustatis, calyce late campanulato dentibus minutis, corolla obliqua labio antico longiore extus superne pruinosa, labio postico bifido (v. corolla 4-loba: *Benth.* l.c.), fructu oblongo-ovoideo apice depresso endocarpio crasso lignoso uniloculare.

Hab. Hongkong, *Wright* (*sp. florif.*); Lantao Island, *Com. C. Ford* (No. 11, *sp. fructif.*).

Folia 3–4 poll. longa, $1\frac{3}{4}$–$2\frac{3}{4}$ poll. lata; petiolus $\frac{3}{4}$–$1\frac{3}{4}$ poll. longus. *Calyx* $\frac{1}{3}$ poll. latus. *Corolla* $1\frac{1}{4}$–$1\frac{1}{2}$ poll. longa. *Drupa* exserta $\frac{1}{2}$ poll. longa.

Known to us previously only from the solitary specimen, collected by Mr. Wright and described by Mr. Bentham. Probably very local in Hongkong. I have not found a seed in the two fruits examined, which are unilocular with a very thick hard putamen. We have an allied species from Hainan, collected by Rev. B. C. Henry, who describes it as a fine tree; flowers white-edged with purple centre. It differs from *G. chinensis* in the broadly ovate-deltoid lobes of the calyx. In other respects of foliage and inflorescence it corresponds closely. The leaves beneath are minutely hispidulous as well as glandular-hoary. It may be called *G. hainanensis*.—D. Oliver.

Fig. 1. Calyx and style, showing unequally bifid stigma. 2. Stamen. 3. Ovary. 4. Same, longitudinal section. *Enlarged.*

M.S. del. et lith.

Pinellia integrifolia, N.E.Br.

Plate 1875.

PINELLIA INTEGRIFOLIA, *N. E. Br.*

Aroideæ. Tribe Arineæ.

P. integrifolia, *N. E. Br.* (*sp. nov.*); tubere parvo depresso-globoso, 1–3-phyllis, petiolis tenuibus, laminis integris oblongis vel interdum ovatis, acuminatis vel cuspidatis, nervis lateralibus adscendentibus in nervum intramarginalem subremotum conjunctis; pedunculo quam petiolus sæpe breviore; spatha parva, tubo ovoideo, lamina lanceolata acuminata, quam tubus triplo longiore; spadicis appendice sigmoideo filiformi, spatham superante; baccis ovoideis, longe rostratis.

Hab. Ichang, China, *Dr. Henry*, No. 663, 4323.

Tuber $\frac{1}{2}$–$\frac{3}{4}$ poll. diam. *Folia* lamina 1–$3\frac{1}{4}$ poll. longa, $\frac{1}{2}$–$1\frac{1}{2}$ poll. lata; petiolus $1\frac{1}{2}$–9 poll. longus. *Scapus* $1\frac{1}{2}$–3 poll. longus.

Well distinguished from the other known species of this genus by its small size and perfectly entire leaves.—N. E. Brown.

Fig. 1. Inflorescence, with the apex of the appendix broken off. 2. Stamens. 3. Ovary. 4. Ovary longitudinally cut through, showing the solitary ovule. 5. Fruit. 6. Longitudinal section of fruit. *All enlarged.*

VOL. IX.—PART IV.] [OCTOBER.

HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS,

OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

THIRD SERIES.

EDITED BY

SIR JOSEPH DALTON HOOKER, K.C.S.I., C.B., M.D., F.R.S.

D.C.L. OXON., LL.D. CANTAB., DUBLIN, EDIN., AND GLOTT., CORRESP. MEMB. INST. FRANCE:

LATE DIRECTOR OF THE ROYAL BOTANICAL GARDENS, KEW.

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Price Four Shillings.

M.S. del. et lith.

Pholidota calceata, Reichb.f.

Plate 1876.

PHOLIDOTA CALCEATA, *Reichb. f.*

Orchideæ. Sub-Tribe Cœlogyneæ.

P. calceata, *Reichb. f. in Walp. Ann.* vi. 238; pseudobulbis in rhizomate repente confertis angustis curvis 1-foliis, scapo filiformi folio elliptico-lanceolato acuto subæquilongo, racemo gracili, bracteis distichis latis cymbiformibus, sepalis 3-nerviis, dorsali orbiculari, lateralibus ovatis, petalis obovato-lanceolatis 1-nerviis, labello calceiformi 3-lobo, lobis lateralibus oblongis, terminali 2-fido lobulis orbiculatis. *Hook. f. Fl. Brit. Ind. v. V. ined.*; Cœlogyne calceata, *Reichb. f.* l.c.

Hab. Khasia hills, alt. 4,000–5,000 feet, *Lobb, J. D. H.*, &c.

Rhizoma crassiusculum, radicibus densis, pseudobulbis 1–1½ pollicaribus fusiformibus v. angustissme conicis. *Folium* 3–6-pollicare in petiolum ¼–1 poll. longum angustatum, tenuiter coriaceum. *Scapus* nudus; racemus 2–4-pollicaris, inclinatus v. cernuus, rachi gracili; bracteæ ¼ poll. longæ, acutæ v. obtusæ; sepala ⅙ poll. longa, membranacea; labello basi profunde saccato; columna rhomboidea, obtusa, clinandrio magno hippocrepiformi. *Capsula* ½ poll. longa.—J. D. Hooker.

Fig. 1. Flower. 2. Dorsal, and 3. lateral sepal. 4. Petal. 5. Lip and column. 6. Lip. 7. Column. *All enlarged.*

Pl. 1877.

M. S. del et lith.

Pholidota protracta Hk.f.

PLATE 1877.

PHOLIDOTA PROTRACTA, *Hook. f.*

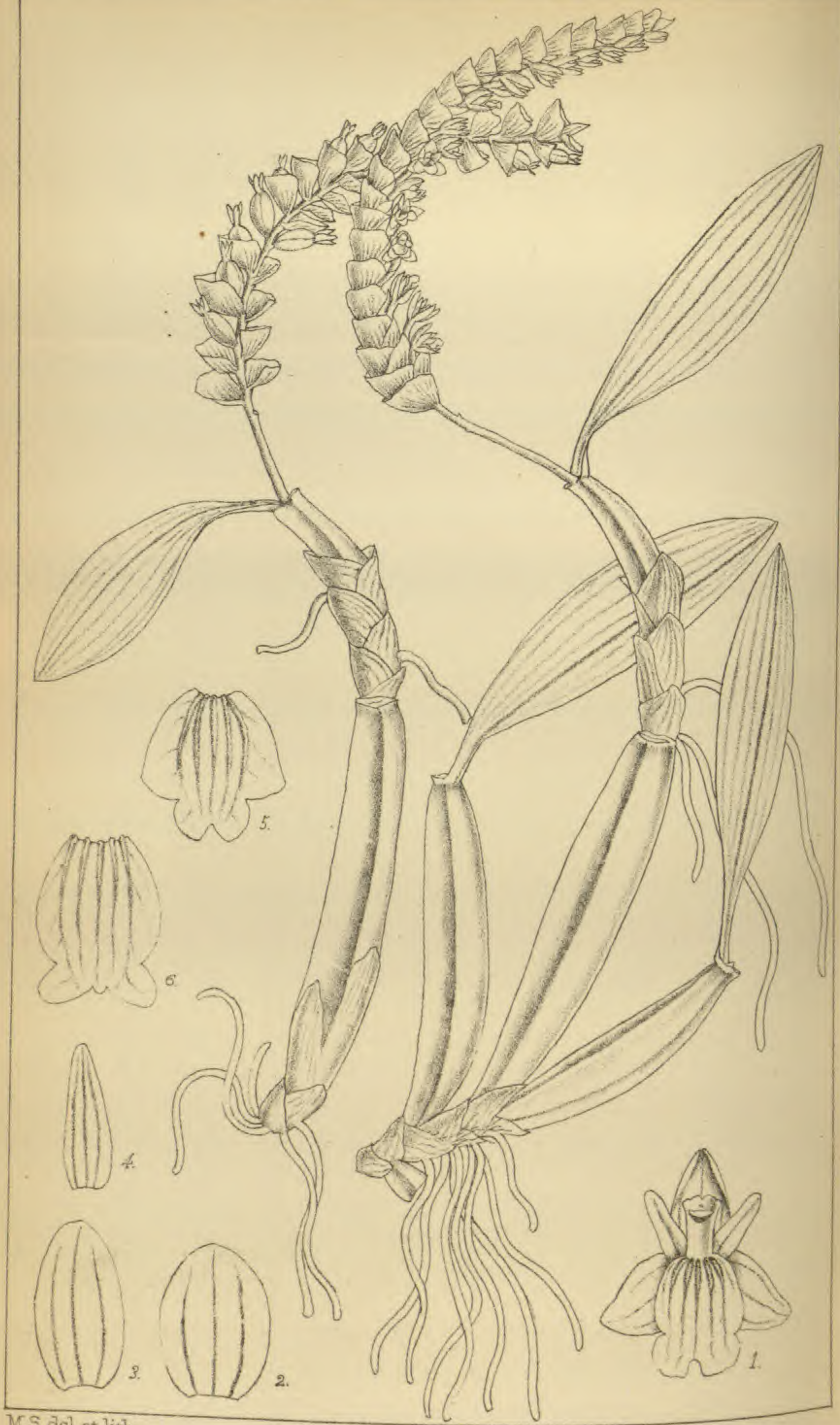
ORCHIDEÆ. Sub-Tribe CŒLOGYNEÆ.

P. protracta, *Hook. f. in Fl. Brit. Ind. v. V. ined.*; pseudobulbis elongatis angustis rhizomate elongato flexuoso vaginato remotis, foliis elliptico-lanceolatis acuminatis, scapis brevissimis rhizomati insertis, racemo brevi filiformi, bracteis distichis late ovatis acutis, floribus minutis, sepalis late ovatis obtusis petalisque ellipticis 3-nerviis, labello ovato-oblongo 5-nervi, basi saccato, lobulo terminali suborbiculari retuso, isthmo inconspicuo.

HAB. Sikkim Himalaya, alt. 7,000 ft., *Griffith's Collectors, C. B. Clarke*; Naga hills, *Prain*.

Rhizoma 1–2-pedale, crassitie pennæ olorinæ, carnosum, valde flexuosum, vaginis elongatis membranaceis, internodiis 2–4-pollicaribus, pseudobulbis $1\frac{1}{2}$–3-pollicaribus cylindraceis. *Folia* 4–6-pollicaria, breviter petiolata, tenuia. *Racemi* 1–$1\frac{1}{2}$ poll. longi, rachi flexuosa; bracteæ $\frac{1}{8}$ poll.; sepala $\frac{1}{8}$ poll. concava; labelli nervi simplices; columna obovata. *Capsula* $\frac{1}{2}$ poll. longa, ellipsoidea.—J. D. HOOKER.

Fig. 1. Flower. 2. Dorsal, and 3. lateral sepals. 4. Petal. 5. Lip. 6. Column. 7. Capsule. *All, except fig. 7, enlarged.*



M.S. del et lith.

Pholidota recurva, Lindl.

PLATE 1878.

PHOLIDOTA RECURVA, *Lindl.*

ORCHIDEÆ. Sub-Tribe CŒLOGYNEÆ.

P. recurva, *Lindl. Gen. & Sp. Orchid.* 37; rhizomate carnoso articulato e pseudobulbis elongatis constante, foliis 2-nis lineari v. elliptico-lanceolatis acutis, scapo brevi, racemo recurvo densifloro, bracteis latissimis subsecundis imbricatis, floribus parvis, sepalis 3-nerviis obtusis, dorsali late elliptico, lateralibus oblongis, petalis ovato-oblongis 1–3-nerviis, labello cymbiformi fere globoso nervis 5 basi lamellatis, auriculis 2 parvis terminato. *Hook. f. Fl. Brit. Ind. v. V. ined.* Cœlogyne recurva, *Reichb. f. in Walp. Ann.* vi. 238.

HAB. Subtropical Himalaya; Nepal, *Wallich.*; Sikkim, *Griffith's Collectors* (*Kew Distrib.* 5032).

Rhizoma 6–8-pollicare, nodis radicantibus; internodiis 2–2½-pollicaribus crassitie pennæ olorinæ, siccis 3–5-pteris politis. *Folia* 2–3-pollicaria, subsessilia, subplicata. *Scapus* pollicaris, basi vaginatus; racemus 2–3-pollicaris; bracteæ ¼ poll. longæ, flabelliformes, persistentes, sepala ⅛ poll. longa; columna apice tantum dilatata, clinandrio transverso. *Capsula* ¼ poll. longa, subglobosa.—J. D. HOOKER.

Fig. 1. Flower. 2. Dorsal, and 3. lateral sepal. 4. Petal. 5 and 6. Lips. *All enlarged.*

M.S. del. et lith.

Pholidota rubra, Lindl.

PLATE 1879.

PHOLIDOTA RUBRA, *Lindl.*

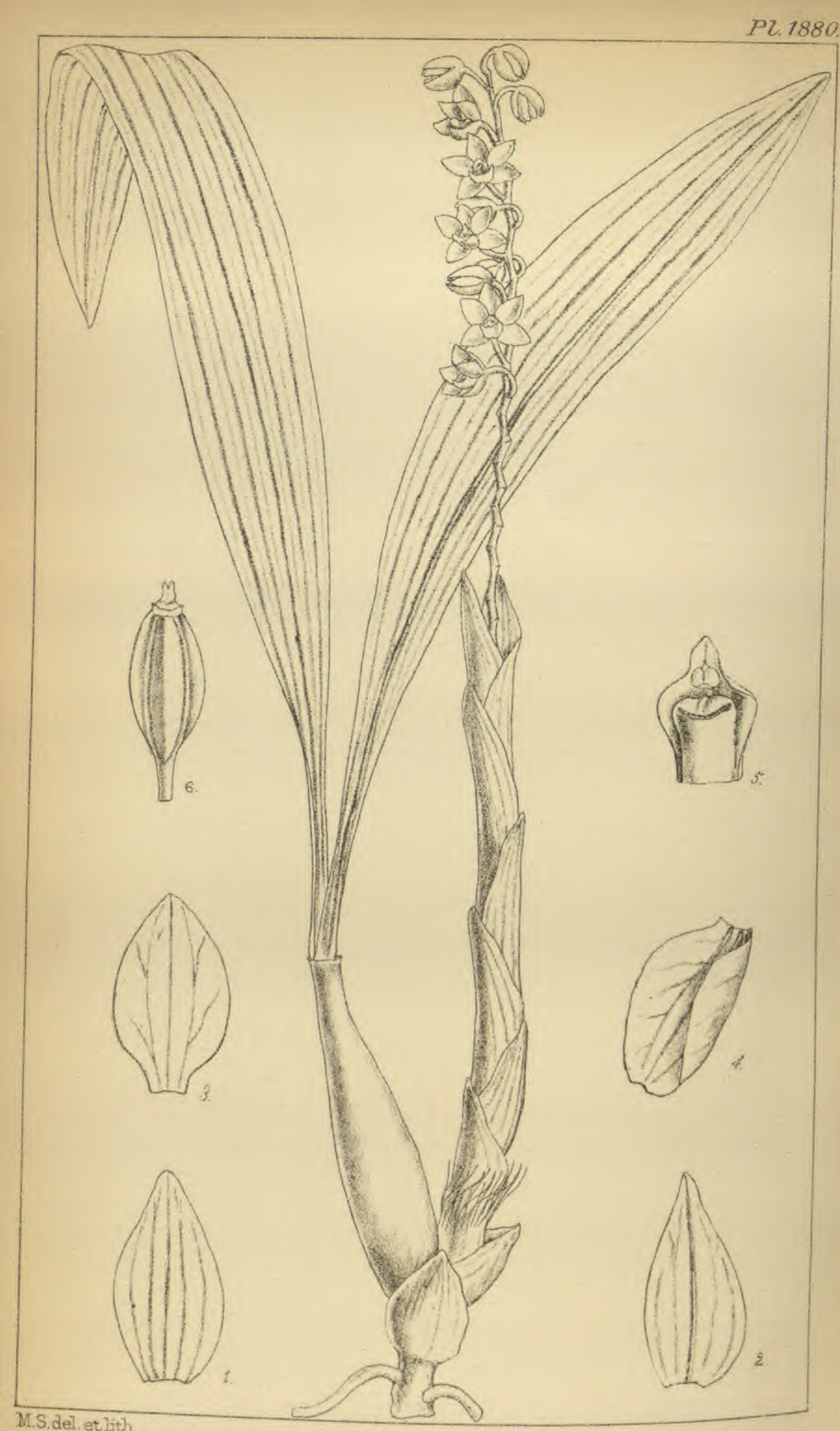
ORCHIDEÆ. Sub-Tribe CŒLOGYNEÆ.

P. rubra, *Lindl. Gen. & Sp. Orchid.* 37; pseudobulbis elongato-obpyriformibus rhizomati crasso insidentibus, foliis elliptico-lanceolatis acuminatis 5-nerviis, scapo brevi bracteis vacuis reflexis vaginato, racemo elongato gracili decurvo laxifloro, bracteis distichis oblongis acutis, sepalo dorsali ovato obtuso 5-nervi, lateralibus late ovatis acuminatis 3-nerviis crasse costatis, petalis linearibus 1-nerviis, labello latiore quam longo obtuse 3-lobo nervis 5 infra medium sublamellatis. *Wall. Pl. As. Rar.* c. iii. p. 21, *t.* 239; *Hook. f. Fl. Brit. Ind. ined.* P. undulata, *Lindl. in Bot. Reg. sub t.* 1213 and xxvii. *Misc.* 6. Cœlogyne rubra et undulata, *Reichb. f. in Walp. Ann.* vi. 238.

HAB. Subtropical Himalaya and the Khasia mountains, alt. 4,000–6,000 ft, *Wallich.* &c., Burma, *Griffith* (*Kew Distrib.* 5387).

Rhizoma crassitie pennæ olorinæ, radicibus crebris; pseudobulbi 2–3-pollicares, cylindracei v. basin versus angustati. *Folia* 4–10 poll. longa, 5-nervia, tenuia. *Scapus* florens basi vaginatus, dein pseudobulbo evoluto nudus; racemus 4–8-pollicaris, flexuosus; bracteæ $\frac{1}{4}$–$\frac{1}{3}$ poll. longæ, demum reflexæ; sepala $\frac{1}{4}$ poll. longa, costa valida; columna cuneato-obovata, obtuse 2-dentata, clinandrio transverso. *Capsula* 2–3 poll. longa.—J. D. HOOKER.

Fig. 1. Flower. 2. Lateral sepal. 3. Petal. 4 and 5. Lips. 6 and 7. Column. *All enlarged.*



M.S. del. et lith.

Pholidota Convallariæ, Rchb. f.

PLATE 1880.

PHOLIDOTA CONVALLARIÆ, *Hook. f.*

ORCHIDEÆ. Sub-Tribe CŒLOGYNEÆ.

P. Convallariæ, *Hook. f. Fl. Brit. Ind. v. V. ined.*; pseudobulbis rhizomati valido insidentibus anguste obpyriformibus, foliis lineari-lanceolatis oblanceolatisve coriaceis obtusis, scapo spathis involuto, racemo erecto, floribus secundis, bracteis angustis, sepalo dorsali ovato-oblongo, lateralibus ovatis acuminatis, petalis late ovatis obtusis 3-nerviis, labello latiore quam longo concavo emarginato 3-nervi. Cœlogyne Convallariæ, *Reichb. f. in Flora* 1872, 277.

HAB. Khasia hills, alt. 3,000–4,000 ft., *J. D. H.* and *T. T.*; Naga hills, on Kohima, alt. 4,500 ft., *Prain*. Tenasserim, at Moulmein, *Parish*.

Pseudobulbi 1–2-pollicares. *Folia* 6–8 poll. longa, $\frac{2}{3}$–1 poll. lata, in petiolum angustata. *Scapus* foliis brevior, strictus; racemus 2–3-pollicaris, rachi valida; bracteæ $\frac{1}{2}$ poll. longæ, lineares, caducæ; sepala $\frac{1}{4}$ poll. longa, dorsali 5-nervi, costa crassa; labellum cymbiforme callis ad basin minutis elongatis. *Capsula* $\frac{1}{3}$ poll. longa, obovoidea.—J. D. HOOKER.

Fig. 1. Dorsal, and 2. lateral sepal. 3. Petal. 4. Lip. 5. Column. 6. Capsule. *All enlarged.*

Pl. 1881.

M.S. del. et lith.

Pholidota Griffithii, Hk.f.

PLATE 1881.

PHOLIDOTA GRIFFITHII, *Hook. f.*

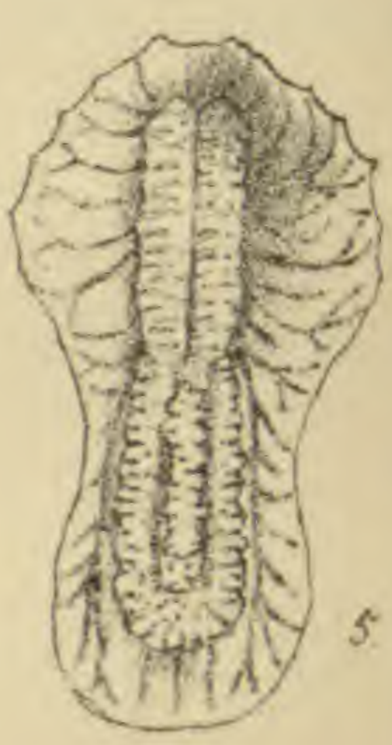
ORCHIDEÆ. Sub-Tribe CŒLOGYNEÆ.

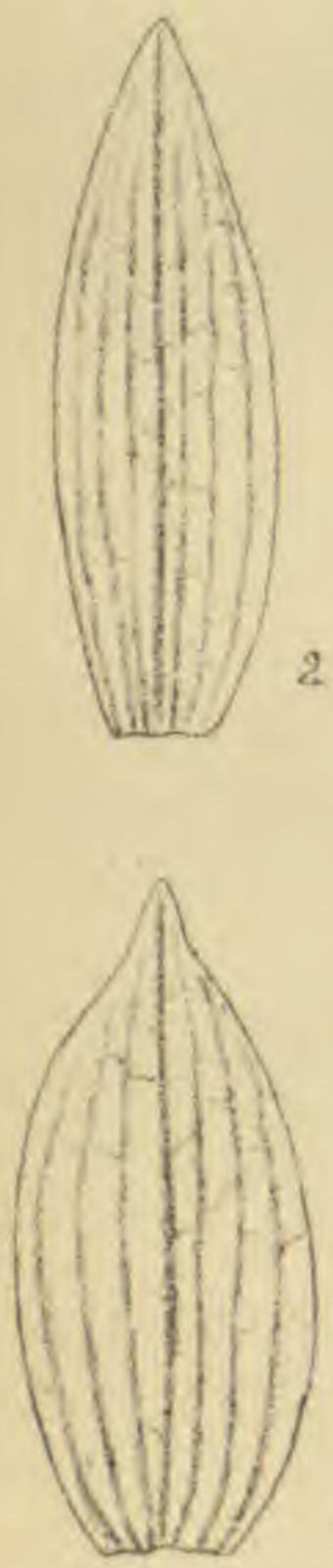
P. Griffithii, *Hook. f. Fl. Brit. Ind. v. V. ined.*; rhizomate crasso carnoso articulato e pseudobulbis elongatis constante, foliis 2-nis elliptico- v. oblongo-lanceolatis acutis, scapo perbrevi, racemo breviusculo gracili flexuoso recurvo laxifloro, bracteis late oblongis subacutis, dorsali late ovato 7-nervi, lateralibus 5-nerviis costa valida, petalis elliptico-lanceolatis 3–5-nerviis, labello cymbiformi nervis 5 crassis basi lamellatis, lobo terminali 2-auriculato lobulo minuto interjecto.

HAB. Tropical Sikkim Himalaya, *Griffith's Collectors* (P. recurva ? *Kew Distrib.* 5045), *J. D. H.*; Khasia mountains on Kollong, alt. 5,000 ft., *C. B. Clarke.*

Rhizoma pedale, nodis radicantibus; internodiis 3–6-pollicaribus, crassitie pennæ olorinæ cylindraceis. *Folia* 3–5 poll. longa, sessilia, 5–7-nervia. *Racemi* 1–2-pollicares, rachi flexuosa; bracteæ $\frac{1}{3}$ poll. longæ; sepala $\frac{1}{3}$ poll. longa; columna obovata, apice sinuato-crenata, clinandrio porrecto ovato-acuminato.—J. D. HOOKER.

Fig. 1. Dorsal, and 2. lateral sepals. 3. Petal. 4. Lip. 5, 6, and 7. Column. *All enlarged.*





M.S. del. et lith.

Eulophia explanata, Ldl.

EULOPHIA EXPLANATA, *Lindl.*

ORCHIDEÆ. Sub-Tribe EULOPHIEÆ.

E. explanata, *Lindl. Gen. & Sp. Orchid.* 180 (*excl. habitat*); scapo laxe 2-vaginato, racemo laxe multifloro, bracteis lanceolatis acuminatis, sepalis 5-nerviis, dorsali ovato-lanceolato, lateralibus oblongo-lanceolatis subacutis, petalis sepalis latioribus ellipticis 5-nerviis, labello oblongo subpanduriformi cymbiformi apice rotundato basi conico-saccato, disco lamellis 2 crassis crenulatis instructo, costa crassa apicem versus carunculata, nervis lateralibus divergentibus, columna brevi. Dipodium scariosum, *Herb. Ham.*

HAB. Nepal; at Maghada, in the Morung, April 27, 1810, *Hamilton.*

Folia tempore florente valde immatura, lanceolata, e caule brevi basi vaginata erumpentia, vaginis latis acutis et obtusis. *Scapus* cum racemo 6–10 poll., 8–10-florus; vaginæ $\frac{1}{2}$–$\frac{2}{3}$ poll. longæ, membranaceæ, subinflatæ, acutæ; bracteæ $\frac{1}{3}$–$\frac{2}{3}$ poll. longæ, pedicellos æquantes v. superantes; flores $\frac{2}{3}$ poll. lati, nervis sepalorum et petalorum trabeculatis.

Thanks to the kind loan of Hamilton's Herbarium by the University of Edinburgh, I am enabled to correct Lindley's habitat for this plant, which in that author's Herbarium is given as 'Ceylon, McRae, 2nd Coll.' His single specimen is the counterpart of Hamilton's, and as no other collector has found the species in Ceylon, there can be no reasonable doubt as to the conclusion that Lindley's specimen was from Hamilton's Herbarium. As Hamilton is the only botanist who has explored the Nepal Morung (base of the Nepalese Himalaya), it is not surprising that this species does not exist in other Herbaria. It will, however, doubtless be found hereafter in an analogous position in Kumaon or Sikkim. The habit is entirely that of an Australian *Dipodium*, to which genus it may possibly belong; but without examining the pollen, for which there are not satisfactory materials, this point cannot be determined. There is very little to distinguish the Australian *Dipodia* from *Eulophia*; the Indian *Dipodia* are totally different in habit, and can hardly be included in the same genus with the Australian.—J. D. HOOKER.

Fig. 1. Dorsal, and 2. lateral sepals. 3. Petal. 4. Side, and 5. and 6. front view of lips. *All enlarged.*

M.S. del et lith

Tainia promensis, Hk.f.

Plate 1883.

TAINIA PROMENSIS, *Hook. f.*

Orchideæ. Sub-Tribe Bletieæ.

T. promensis, *Hook. f. in Fl. Brit. Ind. v. V. ined.*; caule gracili vaginato, folio longe petiolato anguste lanceolato acuminato, scapo elato gracili vaginato, racemo 6–8-floro, bracteis elongatis, sepalis oblongo-lanceolatis acutis, petalisque elliptico-obtusis 5–7-nerviis, labello spathulato eroso, disco concavo callis truncatis onusto, calcare elongato obtuso. Eulophia promensis, *Lindl. in Wall. Cat.* 7365: *Gen. & Sp. Orchid.* 181.

Hab. Pegu, on the Prome Hills, *Wallich.*

Folii lamina pedalis, $1\frac{1}{4}$ poll. lata, plicata, in petiolum gracillimum lamina longiorem angustata, 5-nervis. *Scapus* una cum racemo laxifloro petiolo æquilongus: vaginæ 4–5, 2–3-pollicares; bracteæ pollicares, lanceolatæ, ovarium superantes; sepala $\frac{3}{4}$ poll. longa; columna elongata, anguste alata; pollinia, si non fallor, 4, collateralia.

Of this fine species only two specimens are known, one in the Wallichian Herbarium of the Linnean Society, the other in Lindley's, both of course from the same source. It belongs to the first of the two sections into which I have divided the genus; that in which the lateral sepals are free from the saccate or spurred lip, those, in short, that have no true mentum. To this group belong the *Calanthe viridi-fusca*, 'Bot. Mag.' t. 4669; and *Ania angustifolia*, Lindl. (in Wall. Cat. 3740), both brought under *Tainia* by Bentham ('Gen. Plant.' iii. 515), together with *T. penangiana*, Fl. Brit. Ind. ined.; a new species discovered by *Maingay*.—J. D. Hooker.

Fig. 1. Flower. 2. Lip (from Lindley's drawing). 3. Column. *All enlarged.*

M.S. del. et lith.

Deinanthe bifida, Max.

Plate 1884.

DEINANTHE BIFIDA, *Maxim.*

Saxifragaceæ. Tribe Hydrangeæ.

D. bifida, *Maximowicz in Rev. Hydrang. Asiæ Or.* p. 3, tab. 1 (*Mém. Acad. Imp. Sc. St. Pétersb., sér.* vii. *tom.* x.).

Hab. China, prov. Hupeh, Hsingshan and Nanto, *Dr. A. Henry* (Nos. 6357 and 6434). Also in Japan.

To the very full and excellent description given by M. Maximowicz (*l.c.*) of this fine plant, now first added to the Chinese Flora by Dr. Henry, there is nothing to add. I find our specimens differ simply in the leaves being, in most cases, undivided at the apex, and in the colour of the flowers, which, Dr. Henry says, have the calyx greenish blue, and the petals blue. The flowers also, in our series of specimens, are less numerous in each inflorescence, varying from two or three to eight. It grows 'in ravines on sides of the cliffs, in similar situation to *Hydrangea longipes*, and simulating it at a distance.'—D. Oliver.

Fig. 1. Flower, petals and stamens removed. 2. Stamens. 3. Apex of style. 4. Transverse section of ovary. *All enlarged.*

M.S. del et lith.

Poliothyrsis sinensis Oliv.

Plate 1885.

POLIOTHYRSIS SINENSIS, *Oliv.*

Bixineæ. Tribe Flacourtieæ.

Poliothyrsis, *Oliv.* (*gen. nov.*); *flores* abortu unisexuales monoici apetali in paniculis multifloris dispositi. *Calyx* 5-partitus segmentis ovato-lanceolatis acuminatis, dorso marginibusque tomentellis, æstivatione valvatis. Petala 0. *Fl.* ♂: *Stamina* circ. 20–25 calyce breviora libera inæquilonga, filamentis glabris; antheræ cuneato-obovatæ bilobatæ biloculares longitudinaliter dehiscentes, connectivo inappendiculato latiusculo basi in filamentum angustato; ovarii rudimentum centrale minutum. *Fl.* ♀: *Staminodia* parva numerosa hypogyna ovario breviora. *Ovarium* ovoideum vel oblongo-ovoideum, tomentellum, uniloculare, placentis parietalibus 3 multiovulatis; styli 3 divergentes demum recurvi puberuli; stigmata breviter bifida. *Fructus* capsularis ellipsoideus acutiusculus incano-tomentosus, polyspermus: pericarpio ab apice profunde trifido, valvis ovalibus acutis exocarpio sæpe ab endocarpio plus minus secedente. *Semina* alata (plurima abortiva), albuminosa; albumen carnosum; embryo axilis albumine æquilongus rectus, cotyledonibus planis ellipticis radicula tenue paullo longioribus.—Arbor 10–30-*pedalis*, *ramulis teretibus*, *novellis tomentellis*. Folia *alterna longiuscule petiolata ovata v. ovato-elliptica acutata remotiuscule interdum obscure serrata*, *basi triplinervia pilosula mox glabrata*. Inflorescentia *terminalis breviter pedunculata v. sessilis paniculata canescens*, *pluri- v. multi-flora*, *floribus terminalibus sæpius* ♀.

P. sinensis, *Oliv.* (*sp. unica*).

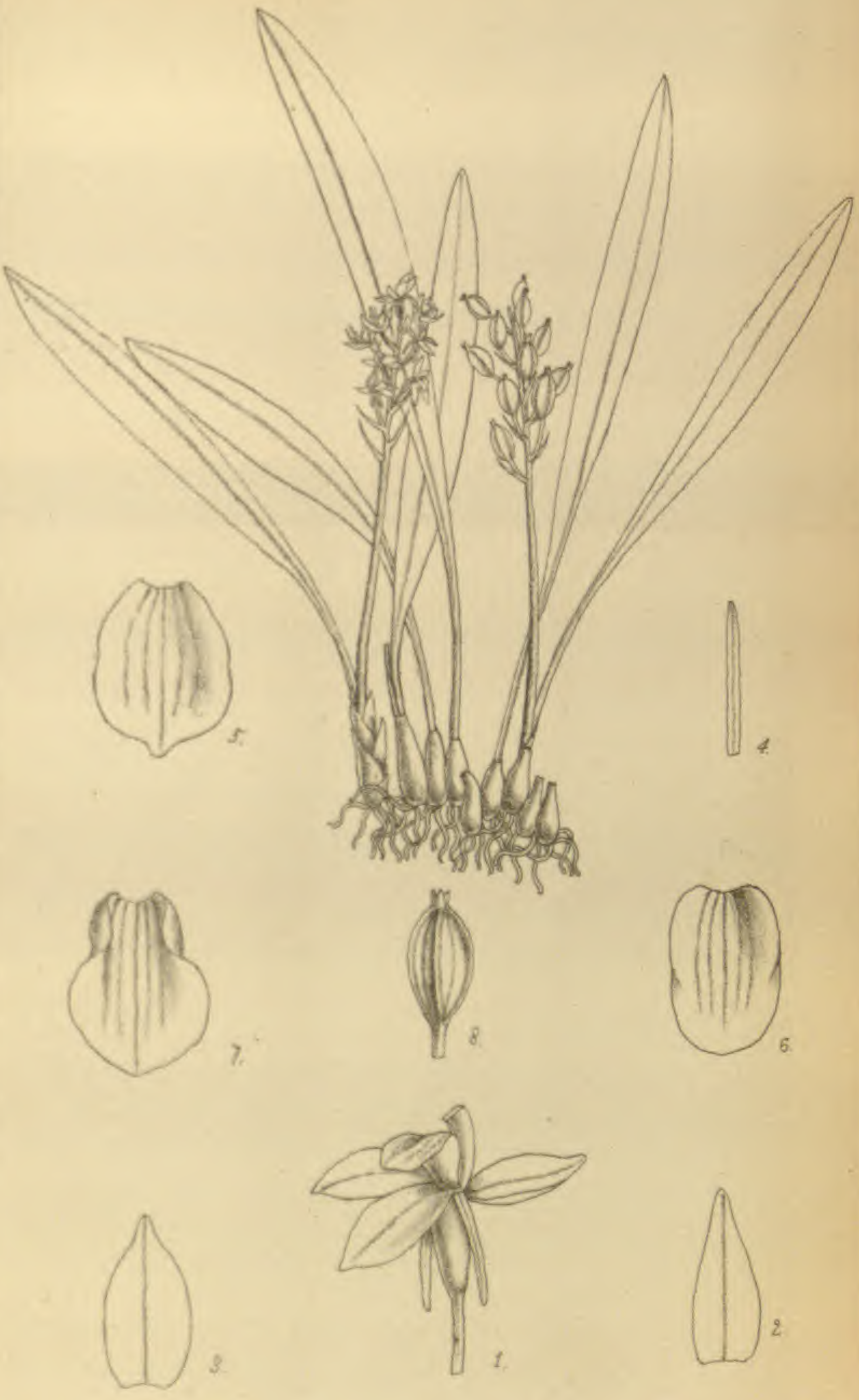
Hab. China, prov. Hupeh; Hsingshan, Changyang and Fang districts; prov. Szechwan, Wushan district, *Dr. A. Henry* (Nos. 5522, 6566, 7140, 7588).

Folia $4\frac{1}{2}$–6 poll. longa, $2\frac{1}{2}$–5 poll. lata; basi obtusa v. cordata, glabrata v. subtus pilosula, exstipulata. *Flores* circ. $\frac{1}{3}$ poll. diam. albido-florescentes. *Capsula* $\frac{1}{2}$–$\frac{4}{5}$ poll. longa.

This remarkable addition to the Order Bixineæ in general facies reminds one much of *Idesia*, which has also been sent us recently from China by Dr. Henry. Besides other characters, it differs from *Idesia* in its capsular fruit, but it is near this genus that, I think, it should be placed.

In the more matured fruits the thin outer hoary epicarp separates from a bony endocarp, the valves of the latter sometimes remaining attached to the peduncle by the parietal indurated persistent vascular cords of the 3 placentas. While the dehiscence of the pericarp is by separation from the apex $\frac{2}{3}$ or $\frac{3}{4}$ of its length into three valves, the line of dehiscence alternating with the placentas, the valves tend also more or less to split a short way from the base upwards, and it is along this line of fission that the placentary cords are set free, as noted above.—D. Oliver.

Fig. 1. Staminate flower. 2. Stamen, back and front view. 3. Pistillate flower. 4. Pistil and staminodia. 5. Transverse section of ovary. 6. Ovule. 7. Seed. 8. Embryo. *Enlarged.*



M.S. del.et lith.

Liparis obscura, Hk.f.

Plate 1886.

LIPARIS OBSCURA, *Hook. f.*

Orchideæ. Sub-Tribe Liparideæ.

Liparis (Coriifolia) obscura, *Hook. f. in Fl. Brit. v. V.* 701, *ined.*; pseudobulbis parvis cæspitosis anguste 1-foliatis, folio petiolato elliptico-lanceolato v. anguste oblanceolato acuto, scapo nudo folio breviore v. subæquante, racemo brevi paucifloro, bracteis anguste lanceolatis ovarium superantibus, floribus minutis, sepalis lanceolatis acutis 1-nerviis recurvis v. revolutis, petalis anguste linearibus, labello recurvo late oblongo v. subquadrato angulis rotundatis, basi truncata, apice subacuto, columna brevi suberecta alis obscuris.—L. angustifolia, *Thwaites, Enum. Pl. Ceyl.* 296 (*non Lindl.*), L. cæspitosa, *Ridley in Jour. Linn. Soc.* xxii. 290 (*non Lindl.*).

Hab. Ceylon; in the central province, alt. 2,000–5,000 ft. *Thwaites.*

Pseudobulbi $\frac{1}{4}$–$\frac{1}{2}$ poll. longi, anguste obpyriformes, rectiv. curvi. *Folia* 3–4 poll. longa, in petiolum angustum cum pseudobulbo articulatum angustata, subcoriacea, enervia. *Scapus* erectus, subrobustus; racemus $\frac{1}{2}$ poll. longus; bracteæ $\frac{1}{6}$ poll. longæ; flores $\frac{1}{10}$ poll. lati, flavi; sepala marginibus non recurvis. *Capsula* $\frac{1}{8}$–$\frac{1}{6}$ poll. longa, globoso-ellipsoidea.

L. angustifolia, Lindl., of Java, differs in the much smaller flower and fruit and shorter lip. The Mauritian *L. cæspitosa*, Lindl., to which it has also been referred, differs in the lanceolate lip. I am indebted to Dr. Trimen for the loan of specimens from the Peradenya garden, which have enabled me to complete the description and give a figure of this little-known plant, of which the specimens in Kew Herbarium are very imperfect.—J. D. Hooker.

Fig. 1. Flower. 2. Dorsal, and 3. lateral sepals spread out. 4. Petal. 5, 6, and 7. Lips. *All enlarged.*

M.S. del. et lith.

Liparis Ridleyi, Hk. f.

Plate 1887.

LIPARIS RIDLEYI, *Hook. f.*

Orchideæ. Sub-Tribe Liparieæ.

L. (Coriifolia) Ridleyi, *Hook. f. in Fl. Brit. Ind. v. V.* 705, *ined.*; foliis 3–4 lineari-lanceolatis acuminatis scapo gracili multibracteato multo brevioribus, racemo elongato multifloro, bracteis lanceolatis ovario brevioribus, floribus $\frac{2}{3}$ poll. latis, sepalis lineari-oblongis obtusis rectis marginibus recurvis, nervo valido, dorsali lanceolato, petalis angustissimis, labello ovato-oblongo recto obtuso basi 2-auriculata auriculis incrassatis, columna lata alata, alis medio filamento pendulo instructis. —L. resupinata, *in parte*, *Ridley in Jour. Linn. Soc.* xxii. 290.

Hab. Sikkim Himalaya, alt. 4,000–6,000 ft., common; *Griffith's Coll.* &c. (*Kew Distrib.* 5081). (*Herb. Ind. Or. Hook. f. & T.*; *Platystylis* 2 *in parte.*)

Herba spithamæa cæspitosa, caule basi subpseudobulbosa. *Folia* alterna, 3–5-pollicaria, sessilia. *Scapus* interdum 6-pollicaris, laxe multiflorus; bracteæ erecto-patentes, $\frac{1}{6}$ $\frac{1}{4}$ poll. longæ; flores gracile pedicellati, virides; labellum 5-nerve, sepalis dimidio brevius.

This, and its ally, *L. resupinata*, have the remarkable character of pendulous capillary filaments, proceeding from the middle of each wing of the column, a character which I have not met with in any other species of the genus. It differs from *L. resupinata* in the much greater size, flowers thrice as large, shorter bracts, and broader wings of the column.—J. D. Hooker.

Fig. 1. Flower. 2. Dorsal, and 3. lateral sepals. 4. Petal. 5. Front and 6. side view of lip. 7. Column. *All enlarged.*

M.S. del. et lith.

Liparis resupinata, Ridl.

Plate 1888.

LIPARIS RESUPINATA, *Ridley*.

Orchideæ. Sub-Tribe Liparieæ.

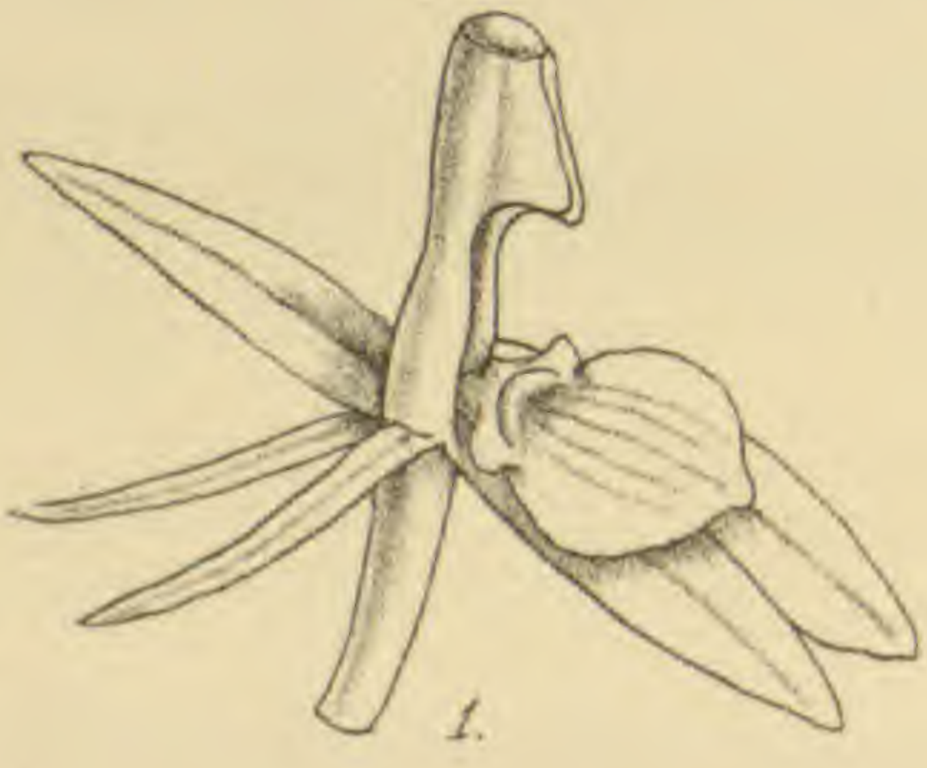
L. (Coriifolia) resupinata, *Ridley in Journ. Linn. Soc.* xxii. 290 (*in parte*); foliis 3–4 lineari-lanceolatis acuminatis scapo gracili multo brevioribus, racemo elongato multifloro, bracteis lanceolatis pedicellis longioribus inferioribus vacuis, sepalis late oblongis obtusis rectis marginibus recurvis, petalis angustissimis, labello late ovato-oblongo basi 2-auriculato 2-calloso, apice rotundato, columna late alata alis medio dilatatis et filamento pendulo instructis.—*Hook. f. Fl. Brit. Ind. v. V.* 705, *ined.*

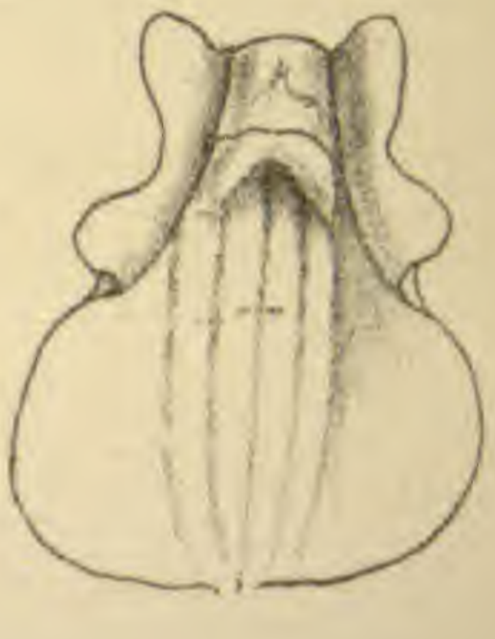
Hab. Sikkim Himalaya, alt. 5,000–6,000 ft. (*Platystylis* 2 *in parte Herb. Ind. Or. H. f. & T.*); Khasia mountains, alt. 4,500–6,500 ft., common, *Griffith* (*Kew Distrib.* 5082); Nilghiri mountains (*fid. Ridley*).

Herba dense cæspitosa, interdum pseudobulbosa, pseudobulbis ovoideo-oblongis subcylindraceisve. *Folia* alterna, submembranacea. *Scapus* una cum racemo 5–7-pollicaris, multiflorus; bracteæ inferiores $1\frac{1}{4}$–$\frac{1}{2}$-pollicares; pedicellum cum ovario $\frac{1}{4}$ poll. longum; flores flavidi.

Under *L. Ridleyi* I have indicated the difference between that species and this. Ridley gives the Nilghiri mountains, Wight, as a habitat, but I find no specimen in Wight's Herbarium, and I should doubt the record.—J. D. Hooker.

Fig. 1. Flower. 2. Dorsal, and 3. lateral sepals spread out. 4. Dorsal sepal, showing the recurved margins. 5. and 6. Lips. 7. Column. *All enlarged.*





M.S. del. et lith.

Liparis delicatula, Hk.f.

PLATE 1889.

LIPARIS DELICATULA.

ORCHIDEÆ. Sub-Tribe LIPARIEÆ.

L. (Coriifolia) delicatula, *Hook. f. in Fl. Brit. Ind. v. V.* 705, *ined.*; parvula, foliis 2-nis petiolatis elliptico-lanceolatis membranaceis scapo filiformi multo brevioribus, racemo laxe multifloro, bracteis ovatis pedicellis brevioribus, floribus parvis, sepalis late oblongis obtusis rectis 1-nerviis marginibus recurvis, petalis angustissimis, labello suborbiculari sepalis multo breviore, basi lato truncato 2-tuberculato et 2-auriculato, apice rotundato abrupte caudiculato, columna late alata.—Liparis decurrens, *Ridley in Jour. Linn. Soc.* xxii. 291 (the Khasia plant only).

HAB. Khasia mountains, alt. 4,000–5,000 ft., Lobb, *J. D. H.* and *T. T.* (*Platystylis decurrens*, Reichb. f.); Mishmi hills in Upper Assam, *Griffith.*

Herba cæspitosa, 3–6-pollicaris; pseudobulbis parvis angustis v. obsoletis. *Folia* 1–1½ poll. longa, ⅓–½ poll. lata. *Scapus* cum racemo 2–3 poll. longus; bracteæ lanceolatæ, membranaceæ; flores ⅙ poll. lati, albi; columnæ alæ infra apicem hamatæ.

Referred by Ridley (*l.c.*) to the Japanese *L. decurrens*: also by Reichb. f.; but differs in the filiform scape, ovate bracts, and eciliate sepals and petals.—J. D. HOOKER.

Fig. 1. Flower. 2. Dorsal, and 3. lateral sepals spread out. 4. Portion of sepal, showing the recurved margins. 5. Lip. 6. and 7. Side and front view of column. *All enlarged.*

4.

5.

3.

2.

1.

M.S. del et lith.

Liparis platyrachis, Hk.f.

PLATE 1890.

LIPARIS PLATYRACHIS.

ORCHIDEÆ. Sub-Tribe LIPARIEÆ.

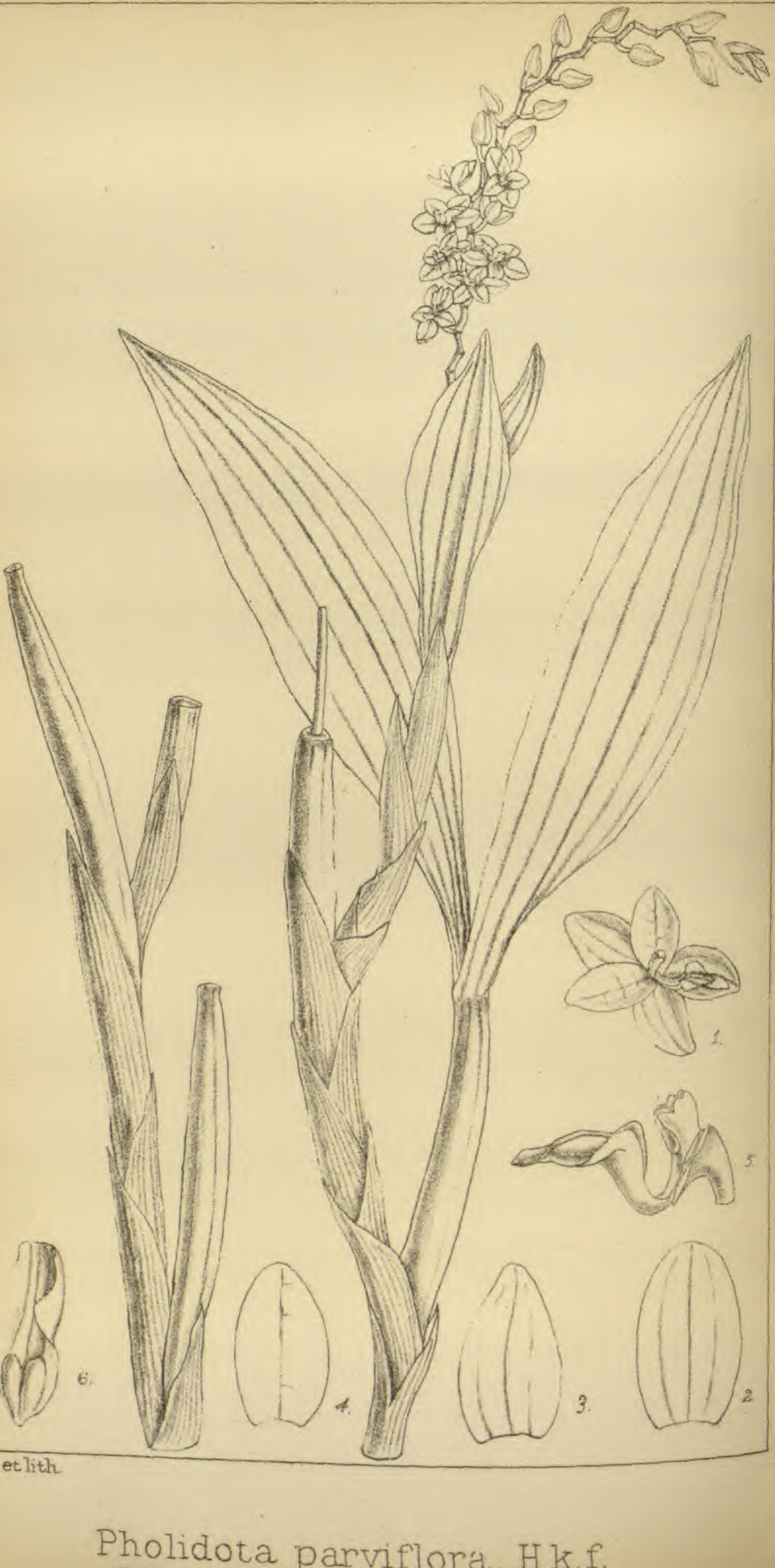
L. (Coriifolia) platyrachis, *Hook. f. in Fl. Brit. Ind. v. V.* 706, *ined.*; foliis 2–3 petiolatis lineari-lanceolatis acuminatis membranaceis scapo complanato v. 2-alato multo brevioribus, bracteis minutis subdistichis subulatis, floribus minutis, sepalis lateralibus subfalcatis oblongis acutiusculis 1-nerviis marginibus revolutis, petalis angustissimis, labello sepalis multo breviore quadrato subpandurato recurvo basi 2-auriculato et 2-calloso, columna breviuscula alata.

HAB. Sikkim Himalaya, alt. 4,000–5,000 ft., *Dr. Treutler, C. B. Clarke.*

Herba pusilla, cæspitosa, 2–3 poll. alta, basi subpseudobulbosa. *Scapus* gracilis, lente curvus, ad basin fere floriferus; racemus laxe multiflorus; bracteæ subulatæ, inferiores vacuæ; flores $\frac{1}{10}$ poll. lati, distantes, albidi, breviter pedicellati; labellum hypochilo brevi biauriculato, epichilo latiore quam longo recurvo, apice rotundato apiculato, basi breviter angulato; columna viridis.

The minute flowers are difficult of analysis, especially the lip. Its nearest ally is *L. perpusilla* (Tab. 1856 B.).—J. D. HOOKER.

Fig. 1. Flower. 2. Sepal, spread out. 3. The same, showing the revolute margins. 4. Lip. 5. Column. *All enlarged.*



M.S. del. et lith.

Pholidota parviflora, Hk.f.

Plate 1891.

PHOLIDOTA PARVIFLORA, *Hook. f.*

Orchideæ. Sub-Tribe Cœlogyneæ.

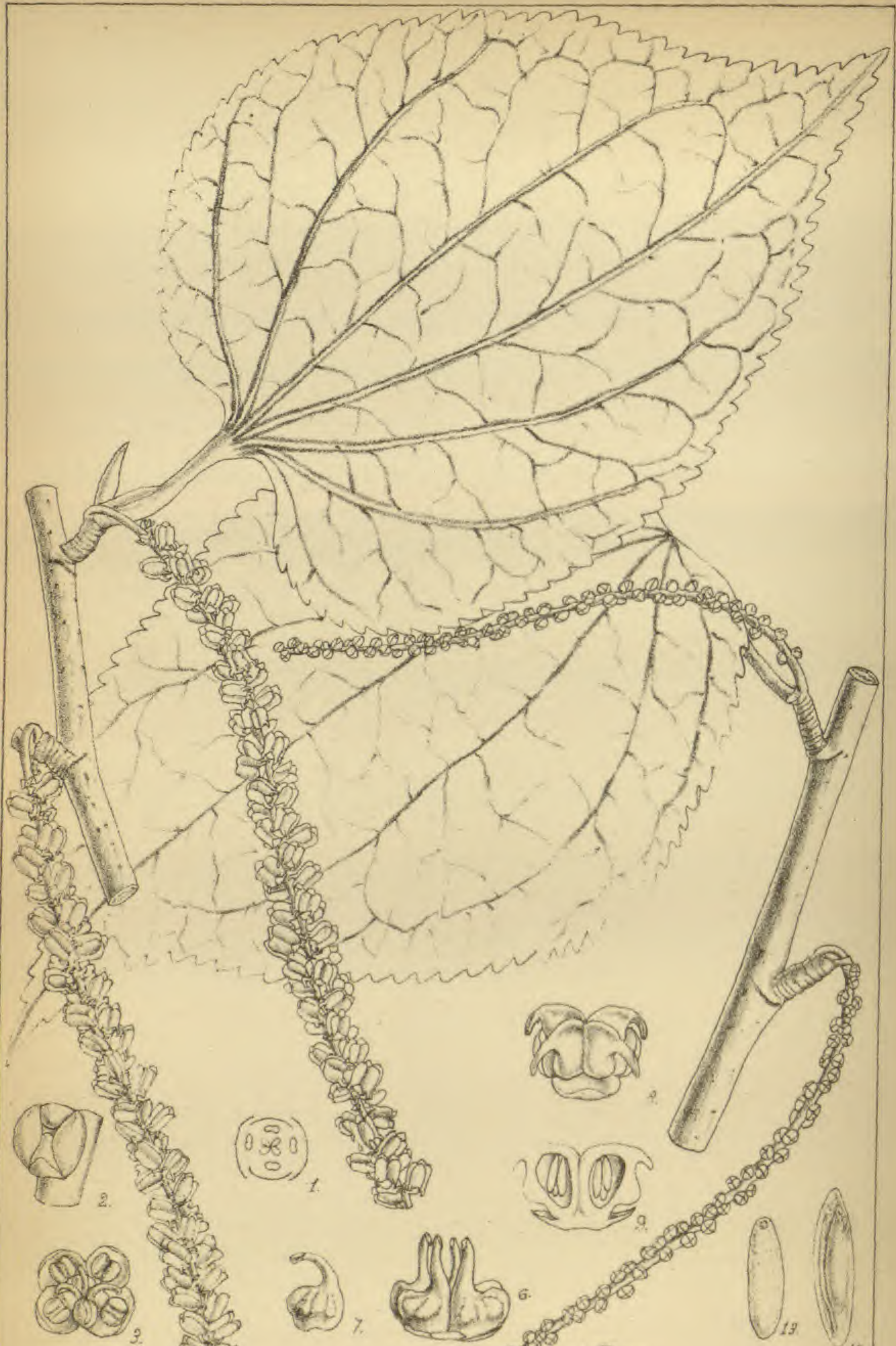
P. parviflora, *Hook. f. in Fl. Brit. Ind. v. V. ined.*; pseudobulbis simplicibus rhizomati valido vaginato ascendenti insidentibus angustis, foliis elliptico-lanceolatis, racemo decurvo, rachi flexuosa, bracteis ovato-lanceolatis, sepalis late ovatis subacutis petalisque ovato-oblongis 1-nerviis, labello cymbiformi carnoso basi et apice contracto lateribus rotundatis, disco apicem versus callis 2 magnis instructo.

Hab. Perak, summit of Gunong Batu Pateh, alt. 6,000 ft., *Wray*.

Rhizoma flexuosum, ut videtur scandens, crassitie pennæ anserinæ, vaginis membranaceis; *pseudobulbi* 1–2-pollicares, erecti, cylindracei. *Folia* $1\frac{1}{2}$–3 poll. longa, acuta, tenuiter coriacea. *Scapus* una cum racemo 3–4-pollicaris; flores pallide rosei; sepala $\frac{1}{8}$ poll. longa; columna fere orbicularis, apice sub-3-dentata. *Capsula* $\frac{1}{4}$ poll. longa, ellipsoidea.

The flowers resemble those of the Javan *P. carnea*, but the pseudobulbs and lip are very different.—J. D. Hooker.

Fig. 1. Flower. 2. Dorsal, and 3. lateral sepals. 4. Petal. 5. Lip and column. 6. Lip. *All enlarged.*



M.S. del. et lith.

Tetracentron sinense, Oliv.

Plate 1892.

TETRACENTRON SINENSE, *Oliv.*

Magnoliaceæ. Tribe Trochodendreæ.

Tetracentron, *Oliv.* (*gen. nov.*). *Flores* sessiles spicati hermaphroditi. *Perianthium* 4-phyllum, segmentis ovato-rotundatis obtusis per paria decussatis, lateralibus æstivatione exterioribus, imbricatis. *Stamina* 4 segmentis perianthii opposita inter lobos carnosulos e basi carpellorum horizontaliter productos inserta: antheræ basifixæ biloculares longitudinaliter dehiscentes. *Carpella* 4 inferne coalita staminibus alterna; styli liberi subulati, alabastro centrales erecti, mox recurvi demum temp. fructifero basilares; ovula ad suturam inserta demum pendula pauca (circ. 4) oblonga anatropa. *Semina* linearia v. oblonga albuminosa, embryo minutissimus; testa laxa cellularis, raphe lata, foramen fungosum.—Arbor 20–50-*pedalis*, *glaberrima*. Folia *alterna petiolata ovato-elliptica breviter acuminata basi obtusa v. subcordata* 5–7-*nervia obtuse serrata*, *exstipulata* (*v. stipulis angustis ad basin petioli vaginantem omnino adnatis*). Spicæ *multifloræ breviter pedunculatæ*, *fructiferæ sæpius decurvæ*, *in ramulis brevibus lateralibus monophyllis perulatis oriundæ*. Flores *parvi*, *flavescentes*, *bracteati*; *bractea minuta rotundata coriacea alabastro multo brevior*. Fructus *columnaris tetragonus*, *apice depressus*, *basi ob stylos persistentes basilares* 4-*calcaratus*.

T. sinense, *Oliv.* (*sp. unica*).

Hab. China, prov. Hupeh, districts Chienshih and Fang, *Dr. A. Henry* (Nos. 6243, 6690, 7417).

Folia 4–5 poll. longa, $2\frac{1}{2}$–3 (–$3\frac{1}{2}$) poll. lata; petiolus $\frac{3}{4}$–1 poll. longus; perulæ lanceolatæ coriaceæ $\frac{1}{3}$–$\frac{1}{2}$ poll. longæ. *Spicæ* $2\frac{1}{2}$–4 poll. longæ. *Fructus* $\frac{1}{8}$–$\frac{1}{6}$ poll. longus.

Of the many plants of singular botanical interest for which we are indebted to Dr. Henry, this is certainly one of the most interesting. I think I am right in referring it to the Tribe *Trochodendreæ*, which now includes four genera, monotypic or at most with two or three species. In habit this plant is nearest to *Cercidiphyllum* of M. Maximowicz, agreeing with it in the curious short perulate lateral ramuli which appear annually to produce each one foliage-leaf and an inflorescence, in *Cercidiphyllum* a single flower, in *Tetracentron* a many-flowered spike. The dilated margins of the sheathing base of the petiole of each euphyll may very probably be regarded as stipular. In the behaviour of the carpels *Tetracentron* is somewhat similar to *Trochodendron*, in which we have also consolidation of the carpels and strongly recurved styles, which in *Tetracentron*, owing to the excessive obliquity of development of the enlarging ovary, become dorsal and finally basal. The obtuse teeth of the leaves are glandular, as they appear to be in the other members of this Tribe.—D. Oliver.

Fig. 1. Floral diagram. 2. Bud. 3. Same laid open. 4. Flower. 5. Stamen, back and front. 6. Pistil. 7. Detached carpel. 8. Pistil, more advanced. 9. Longitudinal section of same. 10. Fruit. 11. Same, longitudinal section. 12. Seed. 13. Same, testa removed. *Enlarged.*

M.S del. et lith.

Toricellia angulata, Oliv.

Plate 1893.

TORICELLIA ANGULATA, *Oliv.*

Cornaceæ (*genus anomalum*).

T. angulata, *Oliv.* (*sp. nov.*); foliis breviter palmatim 5–7-lobatis lobis cuspidatis integris sinuatisve, basi truncatis subcordatisve.

Hab. China, prov. Szechwan, So. Wushan, *Dr. A. Henry* (No. 5524).

Arbor 50-pedalis. *Ramuli* crassiusculi teretes, ultimi primum puberuli. *Folia* 3–4 poll. longa atque lata, membranacea parce puberula glabrata; petioli 1½–3 poll. longi, basi semiamplexicaules dilatati. *Panicula* (fl. ♀) terminalis multiflora puberula. *Bracteæ* lanceolatæ acuminatæ. *Pedicelli* flore sæpius breviores. *Styli* sæpius 3 lineari-oblongi crassiusculi papillosi. *Ovarium* 3-loculare loculis 2 vacuis; ovulum solitarium pendulum.

A genus previously known to us only from the Himalaya. Staminate flowers we have not seen.—D. Oliver.

Fig. 1. Pistillate flower. 2. Longitudinal section of same. 3, 4, 5. Transverse sections of ovary at different levels. *Enlarged.*

Cercis racemosa, Oliv.

Plate 1894.

CERCIS RACEMOSA, *Oliv.*

Leguminosæ. Tribe Bauhinieæ.

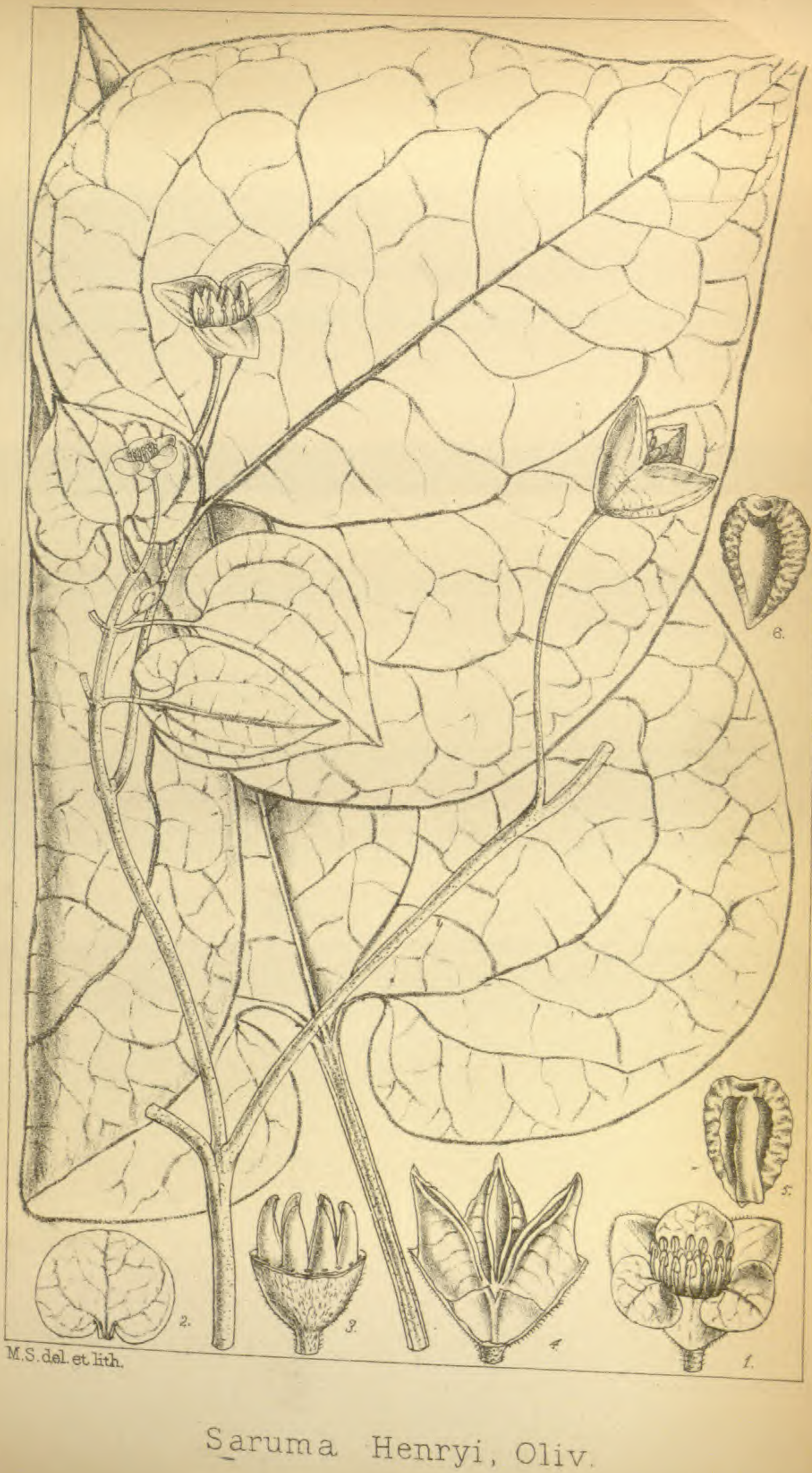
C. racemosa, *Oliv.* (*sp. nov.*); foliis cordiformibus v. basi truncatis 5-nerviis breviter cuspidatis, supra glabris subtus pilosulis, floribus racemosis, racemis multifloris (10–30) in ramos annotinos dispositis, pedicellis gracilibus divergentibus flore longioribus, legumine (immatur.) lineari-oblongo brevissime stipitato glabro sutura superiore angustissime alata.

Hab. China, prov. Szechwan, district Wushan, *Dr. A. Henry* (No. 5602).

Arbuscula 20-pedalis. *Ramuli* hornotini pilosuli. *Folia* 2–4 poll. longa, 2–4 poll. lata; petiolus $\frac{2}{3}$–$1\frac{1}{4}$ poll. longus; stipulæ oblongæ deciduæ $\frac{1}{2}$ poll. longæ. *Racemi* 2–4 poll. longi. *Bracteæ* cymbiformes parvæ glabratæ caducæ. *Pedicelli* $\frac{2}{3}$–$\frac{3}{4}$ poll. longi. *Flores* rosei. *Legumen* 3–4 poll. longum, $\frac{1}{2}$ poll. latum.

A species which it would be very desirable to introduce into cultivation. Singular in the genus from its loosely racemose inflorescence.—D. Oliver.

Fig. 1. Flower, petals removed. 2. Petals. 3. Longitudinal section of ovary and calyx. *Enlarged.*



Saruma Henryi, Oliv.

Plate 1895.

SARUMA HENRYI, *Oliv.*

ARISTOLOCHIACEÆ. Tribe ASAREÆ.

Saruma, *Oliv.* (*gen. nov.*). *Calyx* basi carpellis adnatus, limbo trilobo lobis ovato-rotundatis. *Petala* 3 lobis calycinis alterna tempore florifero æquilonga rotundato-reniformia brevissime et latiuscule unguiculata. *Stamina* 12 stylis æquilonga; anthera connectivo crassiusculo loculis extrorsum adnato, loculis 2 parallelis longitudinaliter introrsum dehiscentibus. *Carpellis* 6 dorso inferne calyci adnatis, inter se fere a basi liberis. *Semina* Asari.—Herba *perennis caulescens 2–3-pedalis, caule puberulo v. parce pilosulo.* Folia *cordiformia membranacea basi sinu latiusculo, apice breviter acuminata.* Flores *solitarii pedunculati terminales folio breviores flavescentes.* Carpella *fructifera coriacea folliculatim dehiscentia.* Semina *ovoidea cymbiformia, testa crustacea dorso transverse rugosa; embryo minutissimus ovoideus bifidus.*

S. Henryi, *Oliv.* (*sp. unica*).

HAB. China, prov. Hupeh, district Fang, *Dr. A. Henry* (Nos. 6676, 6683).

Folia 3–5½ poll. longa, 3½–6 poll. lata, lobis basalibus rotundatis, utrinque plus minus puberula v. supra glabra. *Pedunculi* 1½–2 poll. longi. *Calyx* hemisphæricus extus puberulus, tempore florifero ⅓ poll. diam.; fructifero ¾ poll. diam. *Petala* ¼ poll. lata.

A most interesting addition to the Order, remarkable in the presence of distinct petals [1] and in the follicular dehiscence of the carpels, which are free *inter se* from near the base, though adhering more or less dorsally to the calyx-tube. The seeds, with their characteristic raphe sheathed in their concave face, are as in *Asarum*.

Fig. 1. Flower. 2. Petal. 3. Calyx-tube and carpels. 4. Section of fruit. 5 and 6. Seed. *Enlarged.*

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[1] Count Solms has kindly called my attention to Prof. Alex. Braun's discovery of rudimentary subulate petals, alternating with the calyx-lobes in *Asarum canadense* (noted by M. Duchartre, *DC. Prodr.* [*Aristolochiaceæ*] xv. pt. i. p. 424).

M.S. del. et lith.

Acer Henryi, Pax.

Plate 1896.

ACER HENRYI, *Pax.*

Sapindaceæ. Tribe Acerineæ.

Acer Henryi, *Pax* (*sp. nov.* ex affinitate *A. cissifolii*, C. Koch); arbor ramulis junioribus plus minus pilosis; foliis membranaceis opacis concoloribus subtus plus minus pilosis in nervorum axillis barbatis longe petiolatis trifoliatis; foliolis breviter petiolulatis oblongis acuminatis basi acutis integerrimis; petiolo foliolo medio subæquilongo adpresse piloso basi brevissime vaginato; inflorescentia foliis coætanea in ramulis lateralibus subaphyllis terminali etiam fructifera adpresse pilosa spicata; floribus —; disco extrastaminali crasso; ovario glaberrimo; stylis liberis; fructu glaberrimo sessili loculis oblongis planiusculis adscendentibus, alis subduplo longioribus angulo recto minore divergentibus obtusis, medio latissimis, basin versus angustatis.

Hab. China, prov. Hupeh, *Dr. A. Henry* leg. (No. 5644 B!); prov. Szechwan, *Dr. A. Henry* leg. (No. 5644!).

Arbor ad 10 m. alta ('tree 10 ft.,' 'tree 30 ft.'). *Petiolus* 6–7 cm. longus; *petioluli* $\frac{1}{2}$–1 cm. longi. *Foliola* inter se fere æqualia 6–7 cm. longa, 2–3 cm. lata. *Inflorescentia* 13–15 cm. longa. *Fructus loculus* 8 mm. fere longus, vix 5 mm. latus; *ala* $1\frac{1}{2}$–2 cm. longa, 8–10 mm. lata; fructus juvenilis coccineus.

Allied to *A. cissifolium*, C. Koch, from which it differs by the pubescent and entire leaflets, and the spicate not racemose flowers.—F. Pax.

Fig. 1. A young fruit showing the two free styles. *Enlarged.*

M.S del. et lith.

Acer tenellum, Pax.

Plate 1897.

ACER TENELLUM, *Pax*.

Sapindaceæ. Tribe Acerineæ.

Acer tenellum, *Pax* (sp. nov. ex affin. *A. Lobelii*, Ten.); arbor glaberrima cortice ramulorum cinereo; foliis tenuiter membranaceis supra opacis subtus nitidulis utrinque glaberrimis graciliter petiolatis basi cordatis 5-nerviis trilobis, lobis lateralibus brevibus acutis vel obtusis, terminali producto acuminato, omnibus integerrimis, sinubus inter lobos obtusissimis; foliis indivisis cordatis acuminatis hinc inde inter triloba immixtis; petiolo glaberrimo gracillimo laminam æquante vel paullo superante; inflorescentia in ramulis 2–4-foliatis terminali glaberrima corymbosa, pedunculis filiformibus; floribus lutescentibus andromonoicis mediocribus; sepalis et petalis 5 subæquilongis glaberrimis obtusissimis, illis obovato-oblongis, his spathulatis; staminibus 8–10 etiam in floribus masculis petalis subæquilongis perigynis, filamentis glaberrimis disco medio crasso insertis; ovario glaberrimo; stylis basi connatis superne liberis recurvis; fructu (juvenili) alis angulo obtusissimo divergentibus loculos 2–3-plo superantibus.

Hab. China, prov. Szechwan, *Dr. A. Henry* leg. (No. 5612!).

Arbor 7 m. alt. ('12 ft. tree'). *Folia* 5–6 cm. longa et lata; lobi laterales 1–1½ cm. longi, terminalis 2–3 cm. longus. *Petiolus* 5–6 cm. longus.

A very distinct, most interesting species, which must be placed near *A. Lobelii*; the thin texture of the leaves, which are trilobed or in part undivided and wholly entire, distinguish it from every species of the section *Platanoidea*.—F. Pax.

Fig. 1. Staminate flower. 2. Section of same. 3. Stamen. 4. Pistillate flower. *Enlarged.*

The small but very interesting collection of *Acer* made by Dr. A. Henry in Central China, in the provinces of Hupeh and Szechwan, contains several new species besides the foregoing, which may be here described.

1. **A. sinense**, *Pax* (sp. nov. ex affinitate *A. Campbellii*, Hook. f. et Thoms.); arbor ramulis glaberrimis; foliis coriaceis supra nitidis subtus opacis pallidioribus glaucescentibus utrinque glaberrimis, modice petiolatis latioribus quam longis basi aperte cordatis 5-lobis, lobis ex ovato-acuminatis apicem versus argute serrulatis basi integerrimis, sinubus inter lobos acutis; petiolo limbo breviore basi incrassato glaberrimo; inflorescentia foliis coætanea vel posteriore in ramulis 2-foliatis terminali glaberrima composito-racemosa multiflora;

sepalis et petalis in flore deflorato reflexis, sepalis triangulari-oblongis, petalis oblongis; disco extrastaminali crasso; stylo elongato; stigmatibus 2 stylo multo brevioribus reflexo-patentibus; fructu juvenili parcissime piloso, alis corallinis angulo fere recto divergentibus.

Hab. China, prov. Hupeh, leg. *Dr. A. Henry* (No. 5831 !)

Folia 9–11 cm. fere lata, 6–8 cm. longa. *Petiolus* 3–4 cm. longus. *Stylus* 2 mm. fere longus.

The allied *A. Campbellii*, Hook. f. et Thoms., differs in the caudate leaves green on both sides, the shorter style, and the orbicular-ovate plicate petals.

2. **A. Oliverianum**, *Pax* (sp. nov. intermedia fere inter *Spicata* et *Palmata*); arbor ramulis glaberrimis; foliis membranaceis utrinque præsertim subtus nitidis concoloribus glaberrimis graciliter petiolatis æque longis ac latis basi truncatis 5-lobis, lobis triangularibus acuminatis toto margine argute serrulatis, sinubus inter lobos acutis; petiolo limbo paullo breviore glaberrimo; inflorescentia foliis coætanea vel posteriore in ramulis 2-foliatis terminali fructifera glaberrima corymbosa; disco extrastaminali incrassato; fructu glaberrimo, loculis globosis prominenter nervosis, alis horizontalibus vel angulo obtusissimo divergentibus obtusis medio latissimis; embryone diplecolobeo.

Hab. China, prov. Hupeh, leg. *Dr. A Henry* (No. 6512 !)

Arbor 5-metralis; ('15 ft. tree'). *Folia* 7–9 cm. lata et longa; *petiolus* 5–6 cm. longus, gracillimus. *Fructus* loculus 5 mm. fere longus, ala 2·5 cm. longa, 10–12 mm. late.

A very pretty species, recalling in habit the section *Palmata*, but distinct in the 5-lobed, not 7–11-lobed, leaves, and much larger fruits; it must be placed in the section *Spicata*, near *A. caudatum*, Wall., from which it may be easily distinguished by the leaves, inflorescence, and fruit.

3. **A. oblongum**, *Wall.*; *Pax, Engl. Jahrb.* vii. 208.

Hab. China, prov. Hupeh, leg. *Dr. A. Henry* (No. 6392 !)

4. **A. oblongum**, *Wall.*, var. **concolor**, *Pax* (var. nov.); foliis subtus viridibus opacis nec glaucescentibus a typo differt.

Hab. China, prov. Hupeh, leg. *Dr. A. Henry* (No. 7677 !)

5. **A. lævigatum**, *Wall.*; *Pax, Engl. Jahrb.* vii. 209.

Hab. China, prov. Szechwan, leg. *Dr. A. Henry* (No. 5538 !)

6. **A. cordatum**, *Pax* (sp. nov. ex affin. *A. lævigati*, Wall.); arbor glaberrima cortice ramulorum cinereo; foliis chartaceis vel subcoriaceis utrinque nitidis (exsiccatis) brunneo-viridibus glaberrimis breviter petiolatis longioribus quam latis oblongis vel obovatis basi cordatis trinerviis apicem versus acuminatis minute serrulatis; petiolo glaberrimo limbo multoties breviore; inflorescentia in ramulis 2-foliatis

terminali fructifera glaberrima corymbosa; floribus ——; disco extrastaminali; fructu glaberrimo loculis globosis non carinatis, alis angulo obtuso divergentibus obtusis medio latissimis extrorsum falcatis.

Hab. China, prov. Hupeh, leg. *Dr. A. Henry* (No. 7721 !)

Arbor 5 m. alta ('tree, 15ft.'). *Folia* 5–8 cm. longa, 2½–4 cm. lata. *Petiolus* 11–13 mm. longus. *Fructus loculus* 4 mm. diam. *Samara* 2 cm. longa, 1 cm. lata.

Near *A. lævigatum*, Wall., but distinct by the cordate less reticulate leaves, and the wings of the fruit diverging under an open, not acute angle.

7. **A. Davidi**, *Franch.*; *Pax, Engl. Jahrb.* vii. 216.

Hab. China, prov. Hupeh, leg. *Dr. A. Henry* (No. 6910 !)

8. **A. Davidi**, *Franch.*, var. **glabrescens**, *Pax* (var. nov.); foliis fructibusque adultis glabrescentibus, junioribus lana rufa adspersis.

Hab. China, prov. Szechwan, leg. *Dr. A. Henry* (No. 7085 !)

Similar to *A. Hookeri*, Miq, from which it may be distinguished by the crenulate-dentate leaves and the larger fruits.

9. **A. Lobelii**, *Ten.*, subsp. **lætum** (C. A. Mey.), *Pax*, var. **indicum**; *Pax, Engl. Jahrb.* vii. 237.

Hab. China, prov. Hupeh, leg. *Dr. A. Henry* (No. 5347! 5480 (?) !)

10. **A. erosum**, *Pax* (spec. nov. ex affinitate *A. rufinervis*, Sieb. et Zucc.); arbor foliis subcoriaceis opacis supra glaberrimis subtus secus nervos et in nervorum axillis rufo-tomentosis longe petiolatis basi cordatis 5-nerviis 5-lobis, lobis lateralibus terminali minoribus, infimis quam intermedia minoribus, terminali et intermediis subcordato-acuminatis, omnibus inæqualiter satis grosse serrato-dentatis, dentibus cuspidatis; petiolo glaberrimo crassiusculo laminam superante; inflorescentia in ramulis foliatis terminali (fructifera) subglabra racemosa; floribus ——; fructibus breviter pedicellatis, pedicellis parce pilosis; loculis glabris globosis adscendentibus, alis angulo recto minore divergentibus, medio latissimis obtusis quam loculi duplo longioribus paullo extrorsum falcatis.

Hab. China, prov. Hupeh, leg. *Dr. A Henry* (No. 6937 !)

Arbor 4-metralis ('tree, 12ft.'). *Folia* 7–9 cm. lata, 7–8 cm. longa. *Petiolus* 8–10 cm. longus. *Loculus fructus* 6 mm. longus, *ala* cum loculo 2 cm. longa, 1 cm. lata.

This species is nearly allied to *A. rufinerve*, of Japan, but may be hardly considered as a variety of this species; the firm texture of the distinctly 5-lobed erose leaves, which on the nerves of the lower surface are tomentose, and the petioles, much longer than the leaves, distinguish the new species from *A. rufinerve*; the wings surpass the

cell of the fruit in length 4–5 times in *A. rufinerve*, once or twice in *A. erosum*.

11. **A. Maximowiczii**, *Pax* (spec. nov. ex affinitate *A Tschonoskii*, Maxim.); arbor ramulis glaberrimis cortice ramulorum brunneo; foliis chartaceis opacis supra glaberrimis subtus tantum in nervorum axillis barbatis ceterum glaberrimis longe petiolatis basi cordatis vel truncatis vel rotundatis 5-nerviis 5-lobis, lobo medio valde producto, lateralibus et infimis multo minoribus, omnibus acuminatis vel cordato-acuminatis argute duplicato-serratis subincisis; petiolo glaberrimo laminam æquante vel superante; inflorescentia in ramulis 2-foliatis terminali glaberrima simpliciter racemosa multiflora; floribus ——; fructibus breviter pedicellatis glaberrimis, loculis globosis horizontalibus, alis quam loculi triplo longioribus angulo obtusissimo divergentibus fere subhorizontalibus obtusis medio latissimis basin versus paullo angustatis; embryone pleurorhizo.

Hab. China, prov. Hupeh, leg. *Dr. A. Henry* (No. 6857! et 6857A!).

Arbor 3-metralis ('tree, 10ft.'). *Folia* 5–9 cm. longa, 4–9 cm. lata. *Petiolus* 3–10 cm. longus. *Fructus loculus* vix 5–6 mm. longus, *ala* cum loculo 2 cm. longa, 5–6 mm. lata.

The species just described is to be placed in the neighbourhood of *A. micranthum*, Sieb. et Zucc. and *A. Tschonoskii*, Maxim., from which it can hardly be distinguished without seeing flowers or fruits. *A. micranthum* has much smaller fruits; the cell reaches half the length of the wing. *A. Tschonoskii*, next allied to our species, has leaves which on the nerves of the lower surface and on the petiole are pubescent; the raceme, moreover, only consists of 6–10 flowers. Also no species of Japan hitherto has been found in the southern parts of the Chinese empire.

12. **A. Francheti**, *Pax* (spec. nov. ex affinitate *A. villosi*, Wall.); arbor foliis chartaceis opacis vel supra paullulo lucidulis supra glaberrimis subtus et adultis tomentosis petiolatis basi rotundato-cordatis 5-nerviis 3-lobis, lobis triangularibus acutis remote serratis; petiolo crassiusculo leviter pubescente lamina breviore; inflorescentia in ramulis vetustioribus laterali simplici corymboso-racemosa pauciflora; floribus ——; fructibus majusculis, loculis horizontalibus globosis elevato-reticulato-cristatis pilosis, alis angulo fere recto divergentibus rectis obtusis medio latissimis basin versus parum angustatis; embryone diplecolobeo.

Hab. China, prov. Hupeh, leg. *Dr. A. Henry* (No. 6456!).

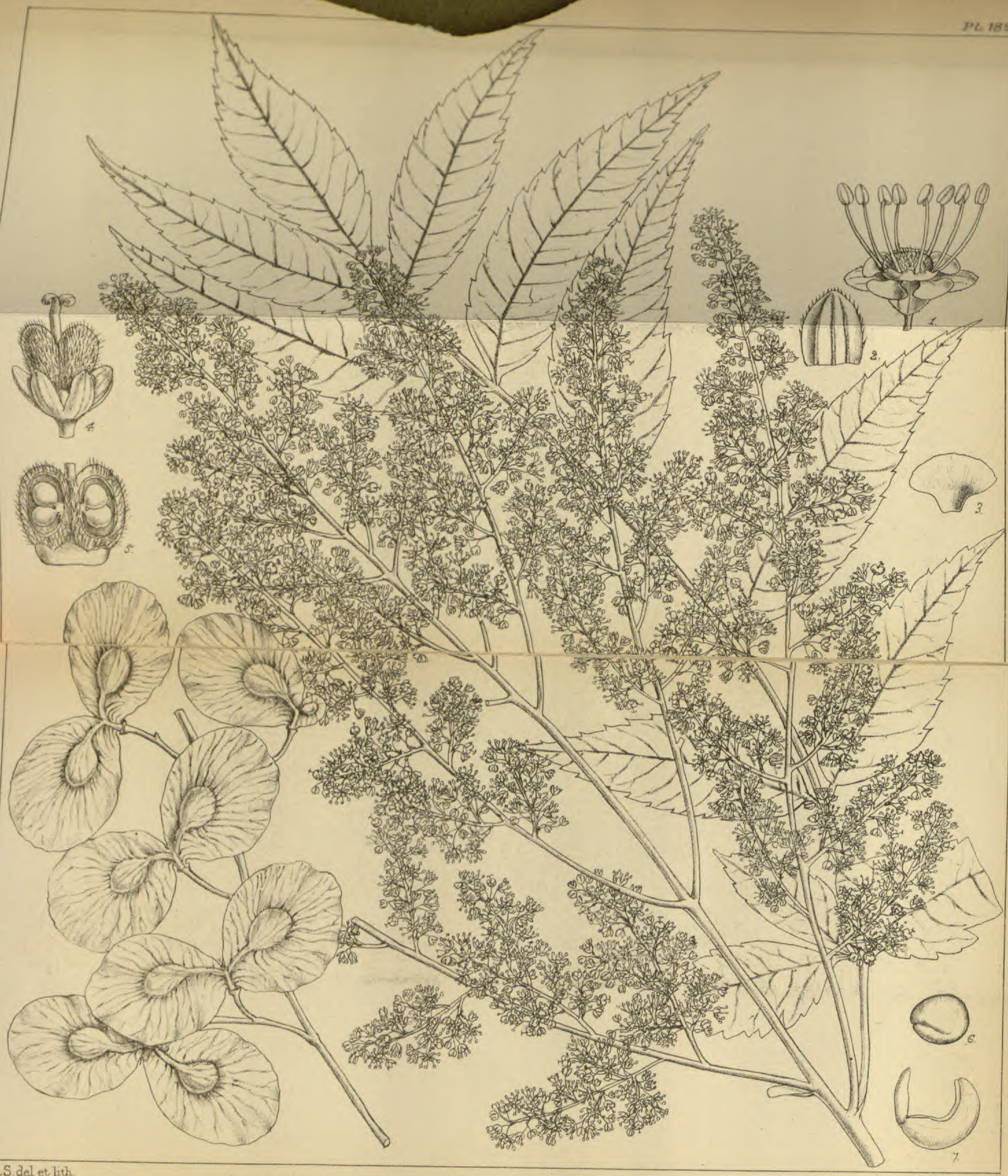
Arbor ad 4 m. ('tree, 12ft.') alta. *Folia* 11–12 cm. lata et longa. *Petiolus* ad 6 cm. longus. *Inflorescentia* subsexflora. *Loculus fructus* 12 mm. fere diam., *ala* cum loculo 5 cm. longa, 18 mm. lata.

Nearly allied to *A. villosum*, Wall., but easily distinguished from it by the trilobed leaves, the small teeth on the leaf-margin, the simple inflorescence, &c.

A. tetramerum, *Pax* (spec. nov. ex affinitate *A. arguti*, Maxim.); arbor foliis juvenilibus (vix e gemma ortis) subtus incanis rugosis plicatis brevissime petiolatis; perulis 4 glaberrimis, exterioribus coccineis, interioribus luteo-viridibus elongatis lanceolatis obtusis apiculatis; inflorescentiis umbellato-fasciculatis 5–6-floris ortis e gemmis propriis 4-perulatis aphyllis secus ramulos breves laterales (rami elongati) apice folia producentes sessilibus; floribus mediocribus cum foliis nascentibus tetrameris lutescentibus breviter pedicellatis cum pedicellis glaberrimis, dioicis; sepalis in flore masculo orbiculari-ovatis obtusissimis; petalis sæpe deficientibus quam sepala brevioribus spathulatis obtusis; staminibus 4 episepalis inclusis, filamentis filiformibus brevibus; disco glandulis 4 alternisepalis intra filamentorum basin et præsertim intra stamina evolutis, glaberrimis; pistillodio in flore masculo nullo.

Hab. China, prov. Hupeh, leg. *Dr. A. Henry* (No. 5313 !).

This is the most interesting species of *Acer* Dr. Henry collected in Central China; and although leaves and fruits are unknown, it must be considered as a very distinct species. It has some affinities with *A. argutum*, Maxim.; in both the flowers are dicœcious, and the stamens in number equal to the sepals and opposite them; in both the inflorescence is lateral on short branchlets of an elongate branch. But there is no possibility of uniting the two species into one; for in *A. tetramerum* the flowers are tetramerous and dicœcious, in *A. argutum* pentamerous and androdicœcious; in the first the inflorescence is fasciculate, in the last racemose; the young leaves of *A. argutum* are glabrescent, those of *A. tetramerum* densely pubescent.—F. Pax.



L.S. del et lith.

Dipteronia sinensis Oliv.

Plate 1898.

DIPTERONIA SINENSIS, *Oliv.*

Sapindaceæ. Tribe Acerineæ.

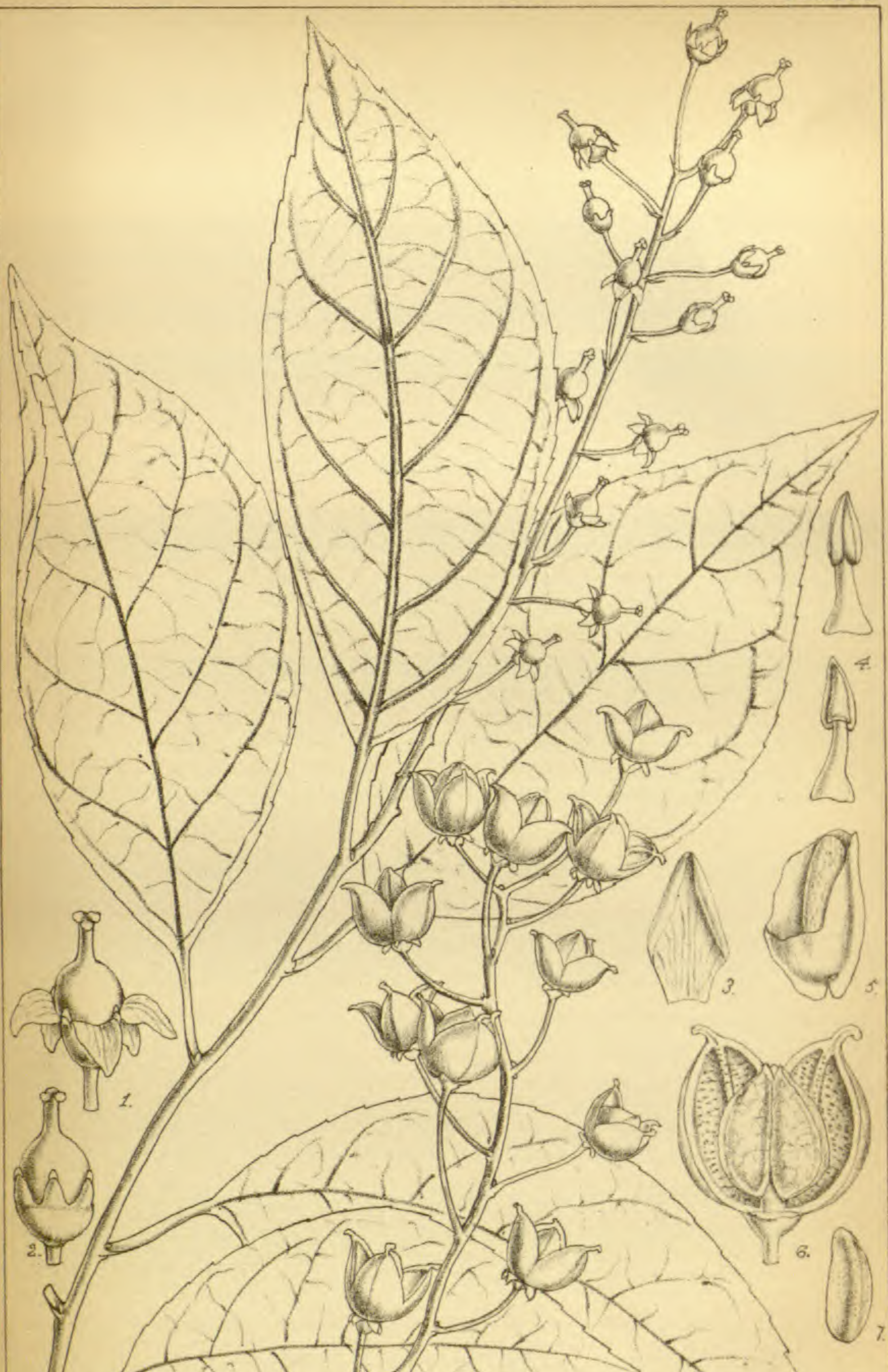
Dipteronia, *Oliv.* (*gen. nov.*). *Flores* polygami. *Calyx* sæpius 5-partitus segmentis ovatis v. ellipticis brevibus æstivatione apertis. *Petala* cum laciniis calycinis alterna calyce subæquilonga transverse oblonga v. rotundata brevissime et late unguiculata. *Discus* annularis lobatus. *Fl.* ♂ : *Stamina* sæpius 8; filamenta glabra calyce 3–4-plo longiora; antheræ mediofixæ ellipticæ biloculares longitudinaliter dehiscentes. *Rudimentum ovarii* hirsutum. *Fl.* ♀ : *Ovarium* lateraliter compressum bilobum hirsutum biloculare; ovula oblique geminata; stylus apice breviter bifidus lobis stigmatiferis recurvis. *Carpella fructifera* divergentia basi tantum connata, ala latiuscula membranacea circumdata. *Semina* solitaria exalbuminosa; embryo incurvus, cotyledonibus planis falcatis radicula longiuscula longioribus.—Arbor 20-*pedalis*. Folia *opposita imparipinnata, foliolis lateralibus petiolulatis v. subsessilibus 4–7-jugis lanceolatis v. ovato-lanceolatis acuminatis acute et grosse serratis glabris v. utrinque parce pilosulis.* Flores *paniculati, paniculis terminalibus amplis multifloris ramosis glabratis; bracteis parvis oblongis ciliatis caducis.*

D. sinensis, *Oliv.* (*sp. unica*).

Hab. China, prov. Hupeh, districts Hsingshan, Chienshih, and Patung; prov. Szechwan, So. Wushan, *Dr. A. Henry* (Nos. 5696, 6505, 7259).

Folia $\frac{3}{4}$–$1\frac{1}{2}$ ped. longa, petiolata; foliola membranacea 3–5 poll. longa, 1–2 poll. lata. *Flores* florescentes parvi pedicellati, pedicelli graciles calyce sæpius 3–6-plo longiores; stamina longe exserta. *Carpella* fructifera compressa oblique obovata, circ. 1 poll. longa, $\frac{2}{3}$–$\frac{3}{4}$ poll. lata.—D. Oliver.

Fig. 1. Staminate flower. 2. Sepal. 3. Petal. 4. Pistillate flower. 5. Longitudinal section of ovary. 6. Seed. 7. Embryo. *Enlarged.*



M.S. del. et lith.

Erythrospermum hypoleucum, Oliv.

PLATE 1899.

ERYTHROSPERMUM HYPOLEUCUM, *Oliv.*

BIXINEÆ. Tribe FLACOURTIEÆ.

E. hypoleucum, *Oliv.* (*sp. nov.*); glaberrima, foliis ellipticis breviter acuminatis apicem versus obscure serratis, basi rotundatis cuneatisve, subtus albido-glaucis tenuiter coriaceis petiolatis, floribus in racemis terminalibus breviter pedunculatis dispositis, bracteis anguste linearibus deciduis, capsula globosa.

HAB. China, prov. Szechwan, Wushan; prov. Hupeh, Patung; and prov. Hunan, Shih-mên, *Dr. A. Henry* (Nos. 5877, 5887A, 7553).

Folia 3–4½ poll. longa, 1½–2 poll. lata; petiolus ½–¾ poll. longus. *Racemi* 3–4 poll. longi, sæpius 8–12-flori. *Capsulæ* ⅓–½ poll. diam.

Another genus new to the Chinese Flora. Distinguished at first sight by the leaves glaucous-white beneath.—D. OLIVER.

Fig. 1. Flower. 2. Same, calyx and petals removed. 3. Petal. 4. Stamen, back and front. 5. Seed and arillus. 6. Fruit after dehiscence. 7. Seed. 8. Embryo. *Enlarged.*

Natsiatum sinense, Oliv.

Plate 1900.

NATSIATUM SINENSE, *Oliv.*

Olacineæ. Tribe Phytocreneæ.

N. sinense, *Oliv* (*sp. nov.*); scandens, foliis cordiformibus apiculatis repando-dentatis pilosulis strigosisve membranaceis longiuscule petiolatis, floribus in paniculis laxis sæpe ex axillis foliorum delapsorum dispositis; pedicellis flore sæpius longioribus.

Hab. China, prov. Hupeh, So. Patung and Chienshih; prov Szechwan, So. Wushan, *Dr. A. Henry* (Nos. 5598, 7342).

Ramuli teretes novellis hornotinis appresse hirtis strigosisve. *Folia* alterna exstipulata $2\frac{1}{2}$–4 poll. longa, $1\frac{1}{2}$–3 poll. lata; petiolus 1–$3\frac{1}{2}$ poll. longus. *Flores* viridescentes $\frac{1}{4}$–$\frac{1}{3}$ poll. diam. *Calyx* parvus 5-fidus lobis carnosulis corolla multo brevior. *Petala* oblongo-lanceolata apice uncinulato-acuminata, basi coalita, intus glabra v. sursum puberula, extus parce strigillosa. *Stamina* 5 petalis alterna libera, squamulis 5 crassiusculis alterna; filamenta glabra corolla breviora; antheræ parvæ ellipticæ biloculares inappendiculatæ. *Ovarium* parce strigosum 1-loculare; ovula 2 pendula (1 abortivum). *Fructus* compressus monospermus ellipticus crustaceus, $\frac{1}{2}$ poll. longus. *Semen* albuminosum, cotyledonibus latis planis.

The ovary of the staminate flowers contains geminate ovules, and possibly they may sometimes mature, but it is not improbable that in general the plant is functionally diœcious.

The only species of the genus previously known is the Himalayan *N. herpeticum*, Ham., in which the flowers are in narrow elongate racemes.—D. Oliver.

Fig. 1. ♂ Flower. 2. Petal. 3. Stamen. 4. Pistillate flower. 5. Same laid open. 6. Pistil and glands of disk. 7. Longitudinal section of ovary. 8. Seed. *Excepting fig.* 8, *enlarged.*

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—— micrantha, *Hook. f.*	1834
—— parvula, *Hook. f.*	1827
—— Rheedii, *Wight*	1832
—— *Rheedii*, Heyne	
—— Stocksii, *Hook. f.*	1833
—— *versicolor*, Lindl.	1832
Microtœna cymosa, *Prain*	1872
Mimosa bahamensis, *Benth.*	1802
Natsiatum sinense, *Oliv.*	1900
Octomeria excavata, Wall.	1846
Ononis Thomsoni, *Ball*	1829
Osteospermum tanacetifolium, *Macowan*	1839
Pachyrrhizus angulatus, *Rich.*	1842
—— tuberosus, *Spreng.*	1843
Phialanthus myrtilloides, *Griseb.*	1801
Pholidota calceata, *Reichb. f.*	1876
—— Convallariæ, *Hook. f.*	1880
—— Griffithii, *Hook. f.*	1881
—— parviflora, *Hook. f.*	1891
—— protracta, *Hook. f.*	1877
—— recurva, *Lindl.*	1878
—— rubra, *Lindl.*	1879
—— *undulata*, Lindl.	1879
Pinellia integrifolia, *N.E. Br.*	1875
Pinus bahamensis, *Griseb.*	1807
Platystylis decurrens, Reichb. f.	1889
Plectranthus Patchouli, Clarke	1872
Poliothyrsis sinensis, *Oliv.*	1885
Ranunculus calandrinioides, *Oliv.*	1828
—— macropetalus, *D.C.*	1821
—— *Raimondii*, Wedd.	1821
Rubus hupehensis, *Oliv.*	1816
Salmea petrobioides, *Griseb.*	1805
Saruma Henryi, *Oliv.*	1895
Sonerila peperomiæfolia, *Oliv.*	1814
Staurochlamys Burchellii, *Baker*	1825
Tainia cordifolia, *Hook. f.*	1861
—— macrantha, *Hook. f.*	1860
—— promensis, *Hook. f.*	1883
Tetracentron sinense, *Oliv.*	1892
Toricellia angulata, *Oliv.*	1893
Tryphostemma triloba, *Bolus*	1838
Tupistra chinensis, *Baker*	1867
Zizyphus Chloroxylon, *Oliv.*	1862